CITY OF NEW YORK

DEPARTMENT OF PARKS & RECREATION

FLUSHING MEADOWS-CORONA PARK

OLMSTED CENTER

FLUSHING, NEW YORK

PROPOSAL FOR BIDS, BID AGREEMENT

AND SPECIFICATIONS

FOR FURNISHING ALL LABOR, MATERIALS AND EQUIPMENT TOGETHER WITH ALL WORK INCIDENTAL THERETO NECESSARY OR REQUIRED FOR EMERGENCY SAFE-UP & CLEAN-UP IN CONNECTION WITH HURRICANE SANDY AT VARIOUS PARKS & RECREATION FACILITIES IN NORTHERN STATEN ISLAND, BOROUGH OF STATEN ISLAND, KNOWN AS CONTRACT RG-313M

City of New York
Parks & Recreation

Veronica M. White
Commissioner

The Arsenal
Central Park
New York, New York 10021

Capital Projects

Olmsted Center
Flushing Meadows-Corona Park
Flushing, New York 11368

Thérèse Braddick, Deputy Commissioner

EMERGENCY SAFE-UP & CLEAN-UP IN CONNECTION WITH HURRICANE SANDY AT VARIOUS PARKS & RECREATION FACILITIES IN NORTHERN STATEN ISLAND, BOROUGH OF STATEN ISLAND, CONTRACT NO. RG-313M

GENERAL CONTRACT REQUIREMENTS:

This is an emergency contract for the emergency safe-up & clean-up in connection with Hurricane Sandy at various Parks & Recreation facilities In Northern Staten Island and their adjacent areas to remove sand, debris and other material, to the satisfaction of the Agency. Parks to be included in the contract are as follows:

Prop#	Park Name & Location
R117	**Buono Beach** Edgewater Street & Hyland Blvd
R046	**FDR Boardwalk & Beaches (South Beach & Midland Beach)** Father Capodanno Blvd between Lily Pond Avenue & Miller Field
R016	**Great Kills Park (New Dorp, Cedar Grove & Oakwood Beach)** Raritan Bay between New Dorp Lane Ave & Tarlton Street

Bids are due on Monday, January 14, 2013at 10:30 AM, at the Olmsted Center, Room 60.

The Agency point of contact shall be Staten Island Team Leader, Michael Browne, RLA, who can be reached at 718-760-6807 (fax) and michael.browne@parks.nyc.gov. No verbal inquiries will be entertained. The last day to submit questions is Wednesday, January 9, 2013 by 3:00 P.M. No questions will be entertained after this time.

The Agency anticipates issuing the Letter of Intent within twenty four (24) hours of the day bids are due. Please be advised that Contractors that will be unable to mobilize and begin work on that day need not bid on this contract. The work shall be completed within 180 consecutive calendar days of the order to work date.

The utilization of line items in the contract shall be made at the unilateral discretion of the Agency.

All methods, hardware and materials of installations shall match those properties and configurations evident in existing structures or areas to remain OR shall meet or exceed current industry standards and best practices, whichever is more stringent, to the satisfaction of the Agency. All materials installed to remain after this contract is complete shall visually match the existing materials in shape, color, texture and other physical criteria, to the satisfaction of the Agency.

All mobilization expenses, insurance and other overhead costs shall be included in the Contractor's price bid for the work. Costs of double shifts, night, weekend or holiday work, or work around tidal conditions shall be deemed part of the bid. No additional compensation shall be paid by the Agency for extended hours or weekend/holiday work.

The Agency requests that if the contractor has a construction trailer, that if provide two (2) desks for the Parks Resident Engineer at no extra cost to the Agency. The providing of space for the Resident Engineer is not a mandatory requirement of this contract.

The Contractor shall be responsible for incorporating all costs related to tidal conditions, site constraints and difficulties associated with access and transportation. No additional payment shall be made by the Agency for extra costs incurred by the Contractor due to these issues.

The Contractor shall be responsible for researching, ascertaining and employing all relevant safety requirements. No additional payment shall be made for labor, materials, equipment and incidental expenses required to enforce all relevant City, State and Federal safety requirements that are necessary to complete the work.

The Contractor shall be solely responsible for any and all filing, permits and otherwise compliance with applicable laws, codes and requirements of relevant regulatory City, State or Federal agencies and departments at no additional cost to the City.

The items, work and other notes listed herein may not describe all work required to successfully complete this contract to the satisfaction of the Agency. All material, labor, equipment and other work and expenses required to complete the reconstruction and stabilization of the park facilities, included, but not limited to the items described below, shall be included in the price bid for this contract.

All work described below or otherwise required shall be executed to the complete satisfaction of the Agency. The Agency may request additional work or different methodology than proposed or underway by the contractor if it is deemed to be unsatisfactory in any way. The Contractor shall comply with all Agency requests within the scope of work of this contract, at no additional cost to the City.

All work to take place under this contract shall be as per Agency approval and under the direct, on-site supervision of the Resident Engineer. Any unauthorized removals, installations or other work shall be promptly replaced or otherwise corrected at no additional cost to the City.

This is a multi-site contract. The Contractor shall have capability of having active crews and heavy equipment at multiple-sites. Throughout the life of the contract, the contractor shall be obligated to commence mobilization for work at each individual site upon notification by the Agency, and is required to notify the Resident Engineer prior to beginning site work.

Pursuant to direction of the Agency, the Contractor may be directed to work at one (1) site at a time and complete all work at that site before commencing work at another site; or the Contractor may be ordered to work at multiple sites at a time, as directed by the Agency.

INSURANCE: Bidders are advised that the insurance requirements contained herein are regarded as a material term of this contract. During performance and up to the date of final acceptance, the Contractor must effect and maintain insurance with companies licensed and authorized to do business in the State of New York, the types and amounts of insurance specified below:

Commercial General Liability Insurance

The Contractor shall provide a Commercial General Liability Insurance policy covering the Contractor as Named Insured and the City as an Additional Insured in the amount of at least One Million Dollars ($1,000,000) and Two Million Dollars ($2,000,000) aggregate. This policy shall protect the City and the Contractor from claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this Agreement. Coverage under this policy shall be at least as broad as that provided by Insurance Services Office ("ISO") Form CG 0001 (12/04 ed.) and must be "occurrence" based rather than "claims-made."

Such Commercial General Liability Insurance shall name the City as an Additional Insured under this policy. Coverage for the City as Additional Insured shall specifically include the City's officials and employees, and shall be at least as broad as ISO Form CG 20 10 (07/04 ed.). Such insurance shall be primary (and non-contributing) to any insurance or self-insurance maintained by the City.

2. Workers' Compensation and Disability Benefits

The Contractor shall provide Workers' Compensation Insurance and Disability Benefits Insurance in accordance with the Laws of the State of New York on behalf of all employees providing services under this Agreement.

3. Employers' Liability

The Contractor shall provide Employers Liability Insurance in the amount of not less than One Million Dollars ($1,000,000) per accident affording compensation due to bodily injury by accident or disease sustained by any employee arising out of and in the course of his/her employment under this Agreement.

4. Automobile Insurance

The Contractor shall provide Automobile Insurance covering as insured the City of New York for all owned, hired and non-owned automobiles used for the duration of this contract. Limit of liability shall be not less than $1,000,000.00.

5. Environmental Insurance

Pollution/Environmental Liability Insurance: The Contractor shall provide Pollution/Environmental Liability Insurance covering bodily injury and property damage, including loss of use of damaged property or of property that has not been physically injured. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos), including any loss, cost or expense incurred as a result of any cleanup of pollutants (including asbestos) or in the investigation, settlement or defense of any claim, suit, or proceedings against the City arising from the operations under this Contract. Such insurance shall be in the Contractor's name and list the City as an Additional Insured. Coverage for the City as Additional Insured shall specifically include the City's officials and employees, and shall be at least as broad as provided to the Contractor for this Project.

6. General Requirements for Insurance Coverage and Policies

All required insurance policies shall be maintained with companies that may lawfully issue the required policy and have an A.M. Best rating of at least A-VII or a Standard and Poor's rating of at least AA, unless prior written approval is obtained from the Mayor's Office of Operations.

The Contractor shall be solely responsible for the payment of all premiums for all required policies and all deductibles and self-insured retentions to which such policies are subject, whether or not the City is an insured under the policy.

The Contractor shall be responsible for providing continuous insurance coverage in the manner, form, and limits required by this Agreement and shall be authorized to perform services only during the effective period of all required coverage.

7. Proof of Insurance

The Contractor shall not commence services under this Agreement unless and until all required certificates have been submitted to and accepted by the Commissioner, with the exception of Pollution/Environmental Liability Insurance, which must be submitted to the agency within 5

days of the Notice to Proceed. Acceptance by the Commissioner of a certificate hereunder does not excuse the Contractor from securing a policy consistent with all provisions of this Article or any liability arising from its failure to do so. The Contractor's indemnification obligations shall not be limited in any way by the Contractor's obligations to obtain and maintain insurance as provided under this Agreement.

For CGL insurance, the Contractor shall file a Certificate of Insurance with the Department. This Certificate shall set forth the required limit of coverage (or more) and the City's status as additional insured pursuant to ISO Form CG 20 10.

For Workers' Compensation Insurance and Disability Benefits Insurance, ACORD forms are not acceptable proof of coverage. The Contractor must submit one of the following forms to the Department, or another form acceptable to the City: C-105.2 – Certificate of Workers' Compensation Insurance, or U-26.3 – State Insurance Fund Certificate of Workers' Compensation Insurance.

The Contractor shall be obligated to provide the City with a copy of any policy required by this Article upon the demand for such policy by the Commissioner or the New York City Law Department.

LICENSED PLUMBER REQUIREMENTS:

Information for Bidders - No individual, corporation, partnership or other business association shall be permitted to bid or be awarded any "plumbing contract", as defined herein, by the Agency unless such individual or entity is a licensed master plumber, as permitted by the Building Code of the City of New York, provided that fifty-one (51%) percent or more of the control or voting stock of such partnership, corporation or other business entity is owned by one or more holders of a license to perform this work in the City of New York.

A "plumbing contract" is defined as a contract where the word "plumbing" appears in the title and/or the contract is deemed to be plumbing work as defined by the Assistant Commissioner in a Contract Addendum.

The installation, maintenance or modification of any and all plumbing, gas piping, swimming pool piping and any other piping system included in any contract whether specifically a "plumbing contract" or not, is to be performed either by a licensed plumber or under the direct and continuing supervision of a licensed plumber, partnership, corporation or other business association as defined and authorized under applicable sections of the Building Code of the City of New York. Copies of a valid certified Master Plumbing License from the City of New York shall be made available for inspection by the Department upon request.

LICENSED ELECTRICIAN REQUIREMENTS:

Information for Bidders - No individual, corporation, partnership or other business association shall be permitted to bid on or be awarded any "electrical contract" as defined herein, by the Agency unless such individual or entity is a licensed electrician, as permitted by the Building Code of the City of New York, provided that fifty-one (51%) percent or more of the control or voting stock of such partnership, corporation or other business entity is owned by one or more holders of a license to perform electrical work in the City of New York.

An "electrical contract" is defined as a contract where the word "electrical" appears in the title and/or the contract is deemed to be electrical work as defined by the Assistant Commissioner in a Contract Addendum.

The installation, maintenance or modification of any and all electrical and lighting systems included in any contract, whether it be specifically an "electrical contract" or not, is to be performed either by a licensed electrician, partnership, corporation or other business association as defined and authorized under applicable sections of the Building Code of the City of New York.

Copies of a valid Electrical License from the City of New York shall be made available for inspection by the Department upon request.

ADJUSTING THE AMOUNT OF WORK

This is a requirements contract.

Pursuant to Schedule A of this contract, the successful bidders shall submit Performance Bonds and Payment Security for 100% of the award amount of the contract.

The estimated quantities of work listed on the bid pages are provided only to determine the low bidder, to establish the approximate relative quantities of the various items, and to set unit prices. Accordingly, the City reserves the right to reduce the amount of work done under each item of the contract. The bid total for this contract is not expected to be achieved.

The City reserves the right to increase and/or decrease the amount of the work in accordance with the Information for Bidders Section 34 – Unit Price Contracts, Standard Construction Contract Article 26 – Methods of Payment for Overruns and Extra Work and Article 29 – Omitted Work.

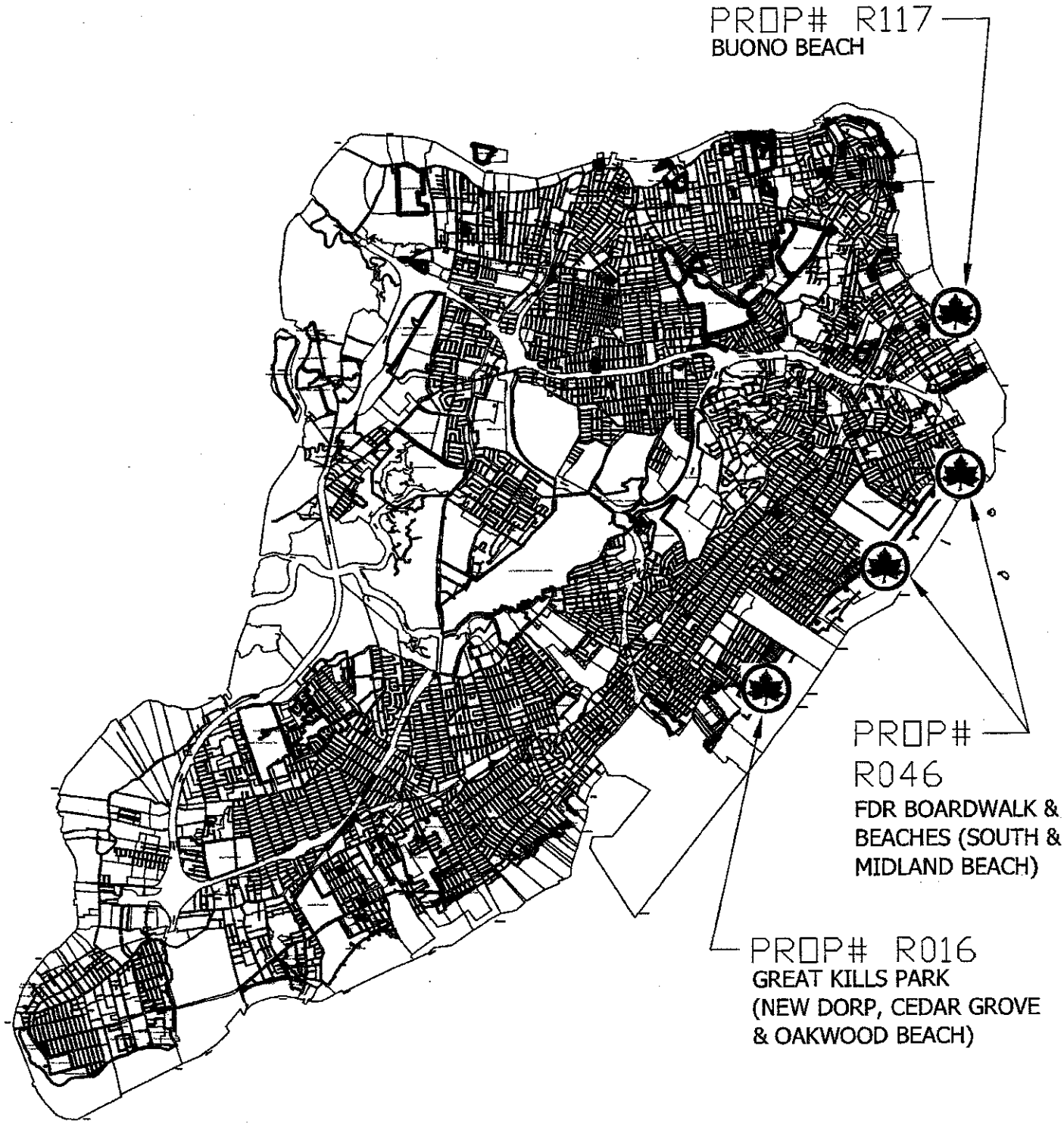
This contract does not include a separate item for mobilization. The Contractor's cost for insurance, bonds, and other incidental expenses required to set up its facilities and operations at each site should be considered as part of its general overhead and factored into its unit prices bid for the individual work items.

All work must be performed within the cost limitations of the contract. All projected costs shall be determined by the Contractor. The Contractor shall be responsible for advising on a timely basis of any contract increases that would result in cost overruns, to permit the agency sufficient time to decide whether to reduce the scope of the work or to go for the increased funds.

Bidders are strongly advised to visit the sites prior to submitting a bid.

LOCATION PLAN **RG-313M**

N.T.S.



THE EMERGENCY SAFE-UP & CLEAN-UP IN CONNECTION WITH HURRICANE SANDY AT VARIOUS PARKS & RECREATION FACILITES IN NORTHERN STATEN ISLAND - CONTRACT NO. RG-313M

THE PRIORITIZED SCOPE OF WORK SHALL INCLUDE THE FOLLOWING:

The following is a list of work that must be performed in the time indicated from the Order to Work. This list is not all inclusive of the work to be performed under the contract and shall be performed by the Contractor simultaneously with any other work and/or sites under the Contract as directed by the Agency. The Agency reserves the right to change, delete, and/or add to the list of the prioritized scope of work. The locations shown are approximate and quantities provided are estimated. The Contractor shall have no right to any claims against the City if the Agency revises/changes/adds/deletes the proposed list.

1. Remove Storm Debris from Beaches : Remove all debris from the beach and adjacent areas. Unless otherwise directed by the Agency, this work must be completed within 90 consecutive calendar days (CCD) of Order to Work at all Swimming Beaches and 120 consecutive calendar days of Order to Work at all other Beaches and Park Sites.

2. Buildings: Demolish buildings specified by the Agency. Place clean sand to fill voids and provide smooth grade transitions. Remove storm debris and sand inside/outside of buildings. Provide temporary blocking and structural support for damaged walls and facades. Clean floor drains and sanitary lines to manhole/sewer. Perform mold and asbestos remediation as per recommendations from mold and asbestos testing by others. Remove wallboard subjected to flood water as well as unsalvageable equipment and furniture. Cordon off uninhabitable spaces. Unless otherwise directed by the Agency this work must be completed within 30 consecutive calendar days (CCD) of Order to Work.

3. Relocate Clean Sand and Beach Raking: Relocate clean sand from areas inland of the boardwalk and promenade as well as other areas as directed. Mechanically clean sand as directed and relocate to the designated beach areas. Grade and mechanically rake the newly deposited sand. Unless otherwise directed by the Agency this work must be completed within 120 consecutive calendar days (CCD) of Order to Work.

4. Ramps Stairs & Railings : Remove damaged/displaced sections of boardwalk, ramps, stairs and railings. Add security fencing upon the boardwalk openings in those areas. Unless otherwise directed by the Agency this work must be completed within 30 consecutive calendar days (CCD) of Order to Work.

5. Security Fencing at Jetties and Outfalls: Install security fencing as indicated in the plans and specifications. Unless otherwise directed by the Agency this work must be completed within 60 consecutive calendar days (CCD) of Order to Work.

FEMA REQUIREMENTS

The Contractor must comply with all the requirements of the Federal Emergency Management Agency (FEMA) for this Contract.

Pursuant to 44 CFR §13.36(i), the following provisions are inserted into the Contract:

1. The City shall have the right to terminate this Contract, in whole or in part, for cause or without cause. The City shall give no less than 30 days written notice of termination ("Termination Notice") for termination without cause and no less than 10 days notice for termination for cause unless a shorter time is determined by the Commissioner to be necessary. If the City terminates this Contract the City shall not incur or pay any further obligation pursuant to this Contract beyond the termination date set by the City in the Termination Notice. The City shall pay for services rendered or goods delivered in accordance with this Contract prior to the termination date. In addition, any obligation necessarily incurred by the Contractor on account of this Contract prior to receipt of notice of termination and falling due after the termination date shall be paid by the City in accordance with the terms of this Contract. In no event shall such obligation be construed as including any lease or other occupancy agreement, oral or written, entered into between the Contractor and its landlord.

2. In the event of a Default of Contractor's obligations under this Contract, the Commissioner, after declaring the Contractor in default, may have the services under the Contract completed by such means and in such manner, by contract with or without public letting, or otherwise, as he or she may deem advisable in accordance with applicable PPB Rules. After such completion, the Commissioner shall certify the expense incurred in such completion, which shall include the cost of re-letting. Should the expense of such completion, as certified by the Commissioner, exceed the total sum which would have been payable under the Contract if it had been completed by the Contractor, any excess shall be promptly paid by the Contractor upon demand by the City. The excess expense of such completion, including any and all related and incidental costs, as so certified by the Commissioner, and any liquidated damages assessed against the Contractor, may be charged against and deducted out of monies earned by the Contractor.

3. If applicable, Contractor shall comply, and shall cause its subcontractors to comply with Executive Order 11246 of September 24, 1964, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967 and supplemented in Department of Labor regulations (41 CFR Chapter 60).(applicable to all construction contracts awarded in excess of $10,000)

4. If applicable, Contractor shall comply, and shall cause its subcontractors to comply with the Copeland "Anti-Kickback" Act (18 U.S.C 874) as supplemented in Department of Labor regulations (29 CFR Part 3).(applicable to contracts for construction or repair)

5. If applicable, Contractor shall comply, and cause its subcontractors to comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR Part 5).(applicable to construction contracts in excess of $2,000)

6. If applicable, Contractor shall comply and cause its subcontractors to comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5).(applicable to construction contracts in excess of $2,000, and in excess of $2,500 for other contract which involve the employment of mechanics or laborers)

7. Contractor shall be required to produce and deliver such reports relating to the services performed under this Contract as may be required by the City or any other State or federal governmental agency with jurisdiction.

8. Pursuant to 44 CFR §13.34, if the services under this Contract are supported by a federal grant of funds FEMA reserves a royalty-free, non-exclusive, and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use, for Federal Government purposes: (1) the copyright in any work developed under a grant, subgrant, or contract under a grant or subgrant; and (2) any rights of copyright to which a grantee, subgrantee, or contractor purchases ownership with grant support.

9. Any reports, documents, data, photographs, deliverables, and/or other materials produced pursuant to this Contract ("Copyrightable Materials"), and any and all drafts and/or other preliminary materials in any format related to such items produced pursuant to this Contract, shall upon their creation become the exclusive property of the City. The Copyrightable Materials shall be considered "work-made-for-hire" within the meaning and purview of Section 101 of the United States Copyright Act, 17 U.S.C. § 101, and the City shall be the copyright owner thereof and of all aspects, elements and components thereof in which copyright protection might exist. To the extent that the Copyrightable Materials do not qualify as "work-made-for-hire," the Contractor hereby irrevocably transfers, assigns and conveys exclusive copyright ownership in and to the Copyrightable Materials to the City, free and clear of any liens, claims, or other encumbrances. The Contractor shall retain no copyright or intellectual property interest in the Copyrightable Materials.

10. The Contractor shall promptly and fully report to the Department any discovery or invention arising out of or developed in the course of performance of this Contract. If the services under this Contract are supported by a federal grant of funds, the Contractor shall promptly and fully report to the federal government for the federal government to make a determination as to whether patent protection on such invention shall be sought and how the rights in the invention or discovery, including rights under any patent issued thereon, shall be disposed of and administered in order to protect the public interest.

11. The Contractor shall grant access to the State, the City, FEMA, and/or the Comptroller General of the United States, or any of their duly authorized representatives, to any books, documents, papers, and/or records of the Contractor that are directly pertinent to the Contract for the purpose of making audit, examination, excerpts, and transcriptions. Contractor shall retain all books, documents, papers or records relating to the services performed under this

Contract for three years after final payment under this Contract is made and all other pending matters are closed.

12. For any contract or subcontract the value of which is in excess of $100,000: The Contractor shall comply and shall cause its subcontractor to comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. §1857(h)), Section 508 of the Clean Water Act (33 U.S.C. §1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15).

13. The Contractor shall comply with mandatory standards and policies relating to energy efficiency that are contained in the State's energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

WITNESSETH:

The parties in consideration of the mutual agreements contained herein, agree as follows:

CHAPTER I
THE CONTRACT AND DEFINITIONS

ARTICLE 1. THE CONTRACT

1.1 Except for titles, subtitles, headings, running headlines, tables of content and indices (all of which are printed herein merely for convenience), the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of this Contract:

1.1.1 All provisions required by law to be inserted in this Contract, whether actually inserted or not;

1.1.2 The Contract Drawings and Specifications;

1.1.3 The General Conditions and Special Conditions, if any;

1.1.4 The Contract;

1.1.5 The Information for Bidders; Request for Proposals; Notice of Solicitation and Proposal For Bids; Bid or Proposal, and, if used, the Bid Booklet;

1.1.6 The Budget Director's Certificate; all Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed with the Work.

1.2 Should any conflict occur in or between the Drawings and Specifications, the Contractor shall be deemed to have estimated the most expensive way of doing the Work, unless the Contractor shall have asked for and obtained a decision in writing from the Commissioner, of the Agency that is entering into this Contract, before the submission of its bid as to what shall govern.

ARTICLE 2. DEFINITIONS

2.1 The following words and expressions, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless a different meaning is clear from the context:

2.1.1 **"Addendum"** or **"Addenda"** shall mean the additional Contract provisions issued in writing by the Commissioner prior to the receipt of bids.

2.1.2 **"Agency"** shall mean a city, county, borough or other office, position, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the City treasury.

2.1.3 **"Agency Chief Contracting Officer" (ACCO)** shall mean a person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the CCPO.

2.1.4 **"City"** shall mean the City of New York.

2.1.5 **"City Chief Procurement Officer" (CCPO)** shall mean a person delegated authority by the Mayor to coordinate and oversee the procurement activity of Mayoral agency staff, including the ACCO and any offices which have oversight responsibility for the procurement of construction.

2.1.6 **"Commissioner"** shall mean the head of the Agency that has entered into this Contract, or his/her duly authorized representative.

2.1.7 **"Comptroller"** shall mean the Comptroller of the City of New York.

2.1.8 **"Contract"or "Contract Documents"** shall mean each of the various parts of the contract referred to in Article 1 hereof, both as a whole and severally.

2.1.9 **"Contract Drawings"** shall mean only those drawings specifically entitled as such and listed in the Specifications or in any Addendum, or any drawings furnished by the Commissioner, pertaining or supplemental thereto.

2.1.10 **"Contract Work"** shall mean everything required to be furnished and done by the Contractor by any one or more of the parts of the Contract referred to in Article 1, except Extra Work as hereinafter defined.

2.1.11 **"Contractor"** shall mean the entity which executed this Contract, whether a corporation, firm, partnership, joint venture, individual, or any combination thereof, and it(s), their, his/ her successors, personal representatives, executors, administrators and assigns, and any person, firm, partnership, joint venture, individual, or corporation which shall at any time be substituted in the place of the Contractor under this Contract.

2.1.12 **"Days"** shall mean calendar days, except where otherwise specified.

2.1.13 **"Engineer"** or **"Architect"** or **"Project Manager"** shall mean the person so designated in writing by the Commissioner to act as such in relation to this Contract, including a private Architect or Engineer or Project Manager, as the case may be.

2.1.14 **"Engineering Audit Officer" (EAO)** shall mean the person so designated by the Commissioner to perform responsible auditing functions hereunder.

2.1.15 **"Extra Work"** shall mean Work other than that required by the Contract at the time of award which is authorized by the Commissioner pursuant to Chapter VI of this Contract.

2.1.16 **"Federal-Aid Contract"** shall mean a contract in which the United States (federal) Government provides financial funding as so designated in the Information for Bidders.

2.1.17 **"Final Acceptance"** shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.

2.1.18 **"Final Approved Punch List"** shall mean a list, approved in writing by the Engineer, specifying those items of Work to be completed by the Contractor after Substantial Completion and dates for the completion of each item of Work.

2.1.19 **"Law"** or **"Laws"** shall mean the Constitution of the State of New York, the New York City Charter, the New York City Administrative Code, a Statute of the United States or

of the State of New York, a local law of the City of New York, any ordinance, rule or regulation having the force of law, or common law.

2.1.20 **"Materialman"** shall mean any corporation, firm, partnership, joint venture, or individual, other than employees of the Contractor, who or which contracts with the Contractor or any Subcontractor, to fabricate or deliver, or who actually fabricates or delivers, plant, materials or equipment to be incorporated in the Work.

2.1.21 **"Means and Methods of Construction"** shall mean the labor, materials, temporary structures, tools, plant, and construction equipment, and the manner and time of their use, necessary to accomplish the result intended by this Contract.

2.1.22 **"Other Contractor(s)"** shall mean any Contractor (other than the entity which executed this Contract or its Subcontractors) who has a contract with the City for work on or adjacent to the building or site of the Work.

2.1.23 **"Payroll Taxes"** shall mean State Unemployment Insurance ("SUI"), Federal Unemployment Insurance (FUI") and payments pursuant to the Federal Insurance Contributions Act ("FICA").

2.1.24 **"Project"** shall mean the public improvement to which this Contract relates.

2.1.25 **"Procurement Policy Board" (PPB)** shall mean the Agency of the City of New York whose function is to establish comprehensive and consistent procurement policies and rules which shall have broad application throughout the City.

2.1.26 **"Required Quantity"** in a unit price Contract shall mean the actual quantity of any item of Work or materials which is required to be performed or furnished in order to comply with the Contract.

2.1.27 **"Resident Engineer"** shall mean the representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the Work.

2.1.28 **"Site"** shall mean the area upon or in which the Contractor's operations are carried on, and such other areas adjacent thereto as may be designated as such by the Engineer.

2.1.29 **"Specifications"** shall mean all of the directions, requirements and standards of performance applying to the Work as hereinafter detailed and designated under the Specifications.

2.1.30 **"Subcontractor"** shall mean any person, firm or corporation, other than employees of the Contractor, who or which contracts with the Contractor or with its Subcontractors to furnish, or actually furnishes labor, or labor and materials, or labor and equipment, at the site. Wherever the word Subcontractor appears, it shall also mean Sub-Subcontractor.

2.1.31 **"Substantial Completion"** shall mean the written determination by the Commissioner that the Work required under this Contract is substantially, but not entirely, complete.

2.1.32 **"Treasurer"** shall mean the Commissioner of the Department of Finance of the City of New York.

2.1.33 **"Work"** shall mean all services required to complete the Project in accordance with the Contract Documents, including without limitation, labor, material, superintendence, management, administration, equipment, and incidentals, and shall include both Contract Work and Extra Work.

CHAPTER II
THE WORK AND ITS PERFORMANCE

ARTICLE 3. CHARACTER OF THE WORK

3.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications** and **Addenda**, the **Work** shall be performed in accordance with the best modern practice, utilizing, unless otherwise specified in writing, new and unused materials of standard first grade quality and workmanship and design of the highest quality, to the satisfaction of the **Commissioner**.

ARTICLE 4. MEANS AND METHODS OF CONSTRUCTION

4.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications** and **Addenda**, the **Means and Methods of Construction** shall be such as the **Contractor** may choose; subject, however, to the **Engineer's** right to reject the **Means and Methods of Construction** proposed by the **Contractor** which in the opinion of the **Engineer**:

4.1.1 Will constitute or create a hazard to the **Work**, or to persons or property; or

4.1.2 Will not produce finished **Work** in accordance with the terms of the **Contract**; or

4.1.3 Will be detrimental to the overall progress of the **Project.**

4.2 The **Engineer's** approval of the **Contractor's Means and Methods of Construction,** or his/her failure to exercise his/her right to reject such means or methods, shall not relieve the **Contractor** of its obligation to complete the **Work** as provided in this **Contract**; nor shall the exercise of such right to reject create a cause of action for damages.

ARTICLE 5. COMPLIANCE WITH LAWS

5.1 The **Contractor** shall comply with all **Laws** applicable to this **Contract** and to the **Work** to be done hereunder.

5.2 Procurement Policy Board Rules: This **Contract** is subject to the Rules of the **PPB** ("**PPB** Rules") in effect at the time of the bid opening for this **Contract**. In the event of a conflict between the **PPB** Rules and a provision of this **Contract**, the **PPB** Rules shall take precedence.

5.3 Noise control code provisions.

5.3.1 In accordance with the provisions of Section 24-216(b) of the Administrative Code of the **City** ("Administrative Code"), Noise Abatement Contract Compliance, devices and activities which will be operated, conducted, constructed or manufactured pursuant to this **Contract** and which are subject to the provisions of the **City** Noise Control Code shall be operated, conducted, constructed, or manufactured without causing a violation of the Administrative Code. Such devices and activities shall incorporate advances in the art of noise control development for the kind and level of noise

emitted or produced by such devices and activities, in accordance with regulations issued by the **Commissioner** of the Department of Environmental Protection.

5.3.2 The Contractor agrees to comply with Section 24-219 of the Administrative Code of the **City** ("Administrative Code") and implementing rules codified at 15 Rules of the City of New York ("RCNY") Section 28-100 et. seq. In accordance with such provisions, the **Contractor**, if the Contractor is the responsible party under such regulations, shall prepare and post a Construction Noise Mitigation Plan at each work site, in which the **Contractor** shall certify that all construction tools and equipment have been maintained so that they operate at normal manufacturers operating specifications. If the **Contractor** cannot make this certification, it must have in place an Alternative Noise Mitigation Plan approved by the New York City Department of Environmental Protection. In addition, the Contractor's certified Construction Noise Mitigation Plan is subject inspection by the Department of Environmental Protection in accordance with 15 RCNY §28-101. No Contract work may take place at a worksite unless there is a Construction Noise Mitigation Plan or approved Alternative Noise Mitigation Plan in place. In addition, the **Contractor** shall create and implement a noise mitigation training program. Failure to comply with these requirements may result in fines and other penalties pursuant to the applicable provisions of the Administrative Code and RCNY.

5.4 Ultra Low Sulfur Diesel Fuel: In accordance with the provisions of Section 24-163.3 of the Administrative Code, the Contractor specifically agrees as follows:

5.4.1 Definitions. For purposes of this Article 5.4, the following definitions apply:

5.4.1(a) "Contractor" means any person or entity that enters into a Public Works Contract with a City agency, or any person or entity that enters into an agreement with such person or entity, to perform work or provide labor or services related to such Public Works Contract

5.4.1(b) "Motor Vehicle" means any self-propelled vehicle designed for transporting persons or property on a street or highway.

5.4.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under section 7411 or section 7521 of title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.4.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty horsepower and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers and similar equipment, except that this term shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five horsepower or less and that are not used in any construction program or project.

5.4.1(e) "Public Works Contract" means a contract with a City agency for a construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; a contract with a City agency for the preparation for any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; or a contract with a City agency for any final work involved in the completion of any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge.

5.4.1(f) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million.

5.4.2 Ultra Low Sulfur Diesel Fuel

5.4.2(a) All Contractors shall use Ultra Low Sulfur Diesel Fuel in diesel-powered Nonroad Vehicles in the performance of this **Contract**.

5.4.2(b) Notwithstanding the requirements of Article 5.4.2(a), Contractors may use diesel fuel that has a sulfur content of no more than thirty parts per million to fulfill the requirements of this Article 5.4.2, where the Commissioner of the New York City Department of Environmental Protection ("DEP Commissioner") has issued a determination that a sufficient quantity of Ultra Low Sulfur Diesel Fuel is not available to meet the needs of City agencies and Contractors. Any such determination shall expire after six months unless renewed.

5.4.2(c) Contractors shall not be required to comply with this Article 5.4.2 where the agency letting this contract makes a written finding, which is approved, in writing, by the DEP Commissioner, that a sufficient quantity of Ultra Low Sulfur Diesel Fuel, or diesel fuel that has a sulfur content of no more than thirty parts per million is not available to meet the requirements of Section 24-163.3 of the Administrative Code, provided that such Contractor in its fulfillment of the requirements of this **Contract**, to the extent practicable, shall use whatever quantity of Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million is available. Any finding made pursuant to this subdivision shall expire after sixty days, at which time the requirements of this Article 5.4.2 shall be in full force and effect unless the Agency renews the finding in writing and such renewal is approved by the DEP Commissioner.

5.4.2(d) Contractors may check on determinations and approvals issued by the DEP Commissioner pursuant to Section 24-163.3 of the Administrative Code, if any, at www.dep.nyc.gov or by contacting the Agency issuing this solicitation.

5.4.2(e) The requirements of this Article 5.4.2 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.3 Best Available Technology

5.4.3(a) All Contractors shall utilize the best available technology for reducing the emission of pollutants for diesel-powered Nonroad Vehicles in the performance of this **Contract**. For determinations of best available technology for each type of diesel-powered Nonroad Vehicle, Contractors shall comply with the regulations of the City Department of Environmental Protection, as and when adopted, Chapter 14 of Title 15 of the Rules of the City of New York (RCNY). The Contractor shall fully document all steps in the best available technology selection process and shall furnish such documentation to the Agency or the DEP Commissioner upon request. The Contractor shall retain all documentation generated in the best available technology selection process for as long as the selected best available technology is in use.

5.4.3(b) No Contractor shall be required to replace best available technology for reducing the emission of pollutants or other authorized technology utilized for a diesel-powered Nonroad Vehicle in accordance with the provisions of this Article 5.4.3 within three years of having first utilized such technology for such vehicle.

5.4.3(c) This Article 5.4.3 shall not apply to any vehicle used to satisfy the requirements of a specific Public Works Contract for fewer than twenty calendar days.

5.4.3(d) The Contractor shall not be required to comply with this Article 5.4.3 with respect to a diesel-powered Nonroad Vehicle under the following circumstances:

5.4.3(d)(1) Where the agency makes a written finding, which is approved, in writing, by the DEP Commissioner, that the best available technology for reducing the emission of pollutants as required by those paragraphs is unavailable for such vehicle, Contractor shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle.

5.4.3(d)(2) Where the DEP Commissioner has issued a written waiver based upon the Contractor having demonstrated to the DEP Commissioner that the use of the best available technology for reducing the emission of pollutants might endanger the operator of such vehicle or those working near such vehicle, due to engine malfunction, Contractor shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle, which would not endanger the operator of such vehicle or those working near such vehicle.

5.4.3(d)(3) In determining which technology to use for the purposes of Articles 5.4.3(d)(1) and 5.4.3(d)(2) above, Contractor shall primarily consider the reduction in emissions of particulate matter and secondarily consider the reduction in emissions of nitrogen oxides associated with the use of such technology, which shall in no event result in an increase in the emissions of either such pollutant.

5.4.3(d)(4) Contractors shall submit requests for a finding or a waiver pursuant to this Article 5.4.3(d) in writing to the DEP Commissioner, with a copy to the ACCO of the Agency issuing the solicitation. Any finding or waiver made or issued pursuant to Articles 5.4.3(d)(1) and 5.4.3(d)(2) above shall expire after one hundred eighty days, at which time the requirements of Article 5.4.3(a) shall be in full force and effect unless the Agency renews the finding, in writing, and the DEP Commissioner approves such finding, in writing, or the DEP Commissioner renews the waiver, in writing.

5.4.3(e) The requirements of this Article 5.4.3 do not apply where they are precluded by federal or State funding requirements or where the contract is an emergency procurement.

5.4.4 Section 24-163 of the Administrative Code. Contractors shall comply with Section 24-163 of the Administrative Code related to the idling of the engines of motor vehicles while parking.

5.4.5 Compliance

5.4.5(a) Contractor's compliance with Article 5.4 may be independently monitored. If it is determined that the Contractor has failed to comply with any provision of Article 5.4, any costs associated with any independent monitoring incurred by the City shall be reimbursed by the Contractor.

5.4.5(b) Any Contractor who violates any provision of Article 5.4, except as provided in Article 5.4.5(c) below, shall be liable for a civil penalty between the amounts of one thousand and ten thousand dollars, in addition to twice the amount of money saved by such Contractor for failure to comply with Article 5.4.

5.4.5(c) No Contractor shall make a false claim with respect to the provisions of Article 5.4 to a City agency. Where a Contractor has been found to have done so, such Contractor shall be liable for a civil penalty of twenty thousand dollars, in addition to twice the amount of money saved by such Contractor in association with having made such false claim.

5.4.6 Reporting

5.4.6(a) For all Public Works Contracts covered by this Article 5.4, the Contractor shall report to the Department the following information:

5.4.6(1) The total number of diesel-powered Nonroad Vehicles used to fulfill the requirements of this Public Works Contract;

5.4.6(2) The number of such Nonroad Vehicles that were powered by Ultra Low Sulfur Diesel Fuel;

5.4.6(3) The number of such Nonroad Vehicles that utilized the best available technology for reducing the emission of pollutants, including a breakdown by vehicle model and the type of technology;

5.4.6(4) The number of such Nonroad Vehicles that utilized such other authorized technology in accordance with Article 5.4.3, including a breakdown by vehicle model and the type of technology used for each such vehicle;

5.4.6(5) The locations where such Nonroad Vehicles were used; and

5.4.6(6) Where a determination is in effect pursuant to Article 5.4.2(b) or 5.4.2(c), detailed information concerning the Contractor's efforts to obtain Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million.

5.4.6(b) The Contractor shall submit the information required by Article 5.4.6(a) at the completion of work under the Public Works Contract and on a yearly basis no later than August 1 throughout the term of the Public Works Contract. The yearly report shall cover work performed the preceding fiscal year (July 1 - June 30).

5.5 Ultra Low Sulfur Diesel Fuel. In accordance with the Coordinated Construction Act for Lower Manhattan, as amended:

5.5.1 Definitions. For purposes of this Article 5.5, the following definitions apply:

5.5.1(a) "Lower Manhattan" means the area to the south of and within the following lines: a line beginning at a point where the United States pierhead line in the Hudson river as it exists now or may be extended would intersect with the southerly line of West Houston street in the borough of Manhattan extended, thence easterly along the southerly side of West Houston street to the southerly side of Houston street, thence easterly along the southerly side of Houston street to the southerly side of East Houston street, thence northeasterly along the southerly side of East Houston street to the point where it would intersect with the United States pierhead line in the East river as it exists now or may be extended, including tax lots within or immediately adjacent thereto.

5.5.1(b) "Lower Manhattan Redevelopment Project" means any project in Lower Manhattan that is funded in whole or in part with federal or State funding, or any project intended to improve transportation between Lower Manhattan and the two air terminals in the City of New York known as LaGuardia Airport and John F. Kennedy International Airport, or between Lower Manhattan and the air terminal in Newark known as Newark Liberty International Airport, and that is funded in whole or in part with federal funding.

5.5.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under section 7411 or section 7521 of title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.5.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty horsepower and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers and similar equipment, except that this terms shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five horsepower or less and that are not used in any construction program or project.

5.5.1(e) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million.

5.5.2 Requirements. **Contractors** and **Subcontractors** are required to use only Ultra Low Sulfur Diesel Fuel to power the diesel-powered Nonroad Vehicles with engine horsepower (HP) rating of 50 HP and above used on a Lower Manhattan Redevelopment Project and, where practicable, to reduce the emission of pollutants by retrofitting such Nonroad Vehicles with oxidation catalysts, particulate filters, or technology that achieves lowest particulate matter emissions.

5.6 Pesticides. In accordance with Section 17-1209 of the Administrative Code, to the extent that the **Contractor** or any **Subcontractor** applies pesticides to any property owned or leased by the **City**, the **Contractor** and any **Subcontractor** shall comply with chapter 12 of the Administrative Code.

ARTICLE 6. INSPECTION

6.1 During the progress of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall at all times afford the representatives of the **City** every reasonable, safe and proper facility for inspecting all **Work** done or being done at the **Site** and also for inspecting the manufacture or preparation of materials and equipment at the place of such manufacture or preparation.

6.2 The **Contractor's** obligation hereunder shall include the uncovering or taking down of finished **Work** and its restoration thereafter; provided, however, that the order to uncover, take down and restore shall be in writing, and further provided that if **Work** thus exposed proves satisfactory, and if the **Contractor** has complied with Article 6.1, such uncovering or taking down and restoration shall be considered an item of **Extra Work** to be paid for in accordance with the provisions of Article 26. If the **Work** thus exposed proves unsatisfactory, the **City** has no obligation to compensate the **Contractor** for the uncovering, taking down or restoration.

6.3 Inspection and approval by the **Commissioner**, the **Engineer**, **Project Manager**, or **Resident Engineer**, of finished **Work** or of **Work** being performed, or of materials and equipment at the place of manufacture or preparation, shall not relieve the **Contractor** of its obligation to perform the **Work** in strict accordance with the **Contract**. Finished or unfinished **Work** not found to be in strict accordance with the **Contract** shall be replaced as directed by the **Engineer**, even though such **Work** may have been previously approved and paid for. Such corrective work is **Contract Work** and shall not be deemed **Extra Work**.

6.4 Rejected **Work** and materials shall be promptly taken down and removed from the **Site**, which must at all times be kept in a reasonably clean and neat condition.

ARTICLE 7. PROTECTION OF WORK AND OF PERSONS AND PROPERTY; NOTICES AND INDEMNIFICATION

7.1 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall be under an absolute obligation to protect the finished and unfinished **Work** against any damage, loss, injury, theft and/or vandalism and in the event of such damage, loss, injury, theft and/or vandalism, it shall promptly replace and/or repair such **Work** at the **Contractor's** sole cost and expense, as directed by the **Resident Engineer**. The obligation to deliver finished **Work** in strict accordance with the **Contract** prior to **Final Acceptance** shall be absolute and shall not be affected by the **Resident Engineer's** approval of, or failure to prohibit, the **Means and Methods of Construction** used by the **Contractor**.

7.2 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall take all reasonable precautions to protect the persons and property of the **City** and of others from damage, loss or injury resulting from the **Contractor's**, and/or its **Subcontractors'** operations under this **Contract.** The **Contractor's** obligation to protect shall include the duty to provide, place or replace and adequately maintain at or about the **Site** suitable and sufficient protection such as lights, barricades, and enclosures.

7.3 The **Contractor** shall comply with the notification requirements set forth below in the event of any loss, damage or injury to **Work**, persons or property, or any accidents arising out of the operations of the **Contractor** and/or its **Subcontractors** under this **Contract.**

7.3.1 The **Contractor** shall make a full and complete report in writing to the **Resident Engineer** within three (3) **Days** after the occurrence.

7.3.2 The **Contractor** shall notify in writing the commercial general liability insurance carrier, and, where applicable, the worker's compensation and/or other insurance carrier, of any such loss, damage, injury, or accident, and any claim or suit arising therefrom, immediately, but not later than 20 days after such event. The **Contractor's** notice to the commercial general liability insurance carrier must expressly specify that "this notice is being given on behalf of the City of New York as Additional Insured as well as [the Contractor] as Named Insured." The Contractor's notice to the insurance carrier shall contain the following information: the name of the **Contractor**, the number of the **Contract**, the date of the occurrence, the location (street address and borough) of the occurrence, and the identity of the persons or things injured, damaged or lost.

7.3.2(a) At the time notice is provided to the insurance carrier(s), the **Contractor** shall provide copies of such notice to the **Comptroller** and the **Commissioner.** Notice to the **Comptroller** shall be sent to the Insurance Unit, NYC Comptroller's Office, 1 Centre Street – Room 1222, New York, New York, 10007. Notice to the **Commissioner** shall be sent to the address set forth in Schedule A of the General Conditions.

7.3.2(b) If the **Contractor** fails to provide any of the foregoing notices to any appropriate insurance carrier(s) in a timely and complete manner, the **Contractor** shall indemnify the City for all losses, judgments, settlements and expenses, including reasonable attorneys' fees, arising from an insurer's disclaimer of coverage citing late notice by or on behalf of the City.

7.4 To the fullest extent permitted by law, the **Contractor** shall indemnify, defend and hold the **City**, its employees and agents (the "Indemnitees") harmless against any and all claims (including but not limited to claims asserted by any employee of the **Contractor** and/or its **Subcontractors)** and costs and expenses of whatever kind (including but not limited to payment or reimbursement of attorneys' fees and disbursements) allegedly arising out of or in any way related to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract** or from the **Contractor's** and/or its **Subcontractors'** failure to comply with any of the provisions of this **Contract** or of the **Law**. Such costs and expenses shall include all those incurred in defending the underlying claim and those incurred in connection with the enforcement of this Article 7.4 by way of cross-claim, third-party

claim, declaratory action or otherwise. The parties expressly agree that the indemnification obligation hereunder contemplates (1) full indemnity in the event of liability imposed against the Indemnitees without negligence and solely by reason of statute, operation of law or otherwise; and (2) partial indemnity in the event of any actual negligence on the part of the Indemnitees either causing or contributing to the underlying claim (in which case, indemnification will be limited to any liability imposed over and above that percentage attributable to actual fault whether by statute, by operation of law, or otherwise). Where partial indemnity is provided hereunder, all costs and expenses shall be indemnified on a pro rata basis.

7.4.1 Indemnification under Article 7.4 or any other provision of the **Contract** shall operate whether or not **Contractor** or its **Subcontractors** have placed and maintained the insurance specified under Article 22.

7.5 The **Contractor** waives all rights against the **City** for any damages or losses for which either is covered under any insurance required under Article 22 (whether or not such insurance is actually procured) or any other insurance applicable to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract**.

7.6 The provisions of this Article shall not be deemed to create any new right of action in favor of third parties against the **Contractor** or the **City**.

CHAPTER III
TIME PROVISIONS

ARTICLE 8. COMMENCEMENT AND PROSECUTION OF THE WORK

8.1 The **Contractor** shall commence **Work** on the date specified in a written notice signed by the **Commissioner**. The time for performance of the **Work** under the **Contract** shall be computed from the date specified in such written notice. **TIME BEING OF THE ESSENCE** to the **City**, the **Contractor** shall thereafter prosecute the **Work** diligently, using such **Means and Methods of Construction** as are in accord with Article 4 herein and as will assure its completion not later than the date specified herein, or on the date to which the time for completion may be extended.

ARTICLE 9. PROGRESS SCHEDULES

9.1 To enable the **Work** to be performed in an orderly and expeditious manner, the **Contractor**, within fifteen (15) **Days** after the Notice to Proceed with this **Contract**, unless otherwise directed by the **Engineer**, shall submit to the **Engineer** a proposed progress schedule in the form of a bar graph or in such other form as specified by the **Engineer**, and monthly cash flow requirements, showing:

9.1.1 The anticipated time of commencement and completion of each of the various operations to be performed under this **Contract**; and

9.1.2 The sequence and interrelation of each of these operations with the others and with those of other related **Contracts**; and

9.1.3 The estimated time required for fabrication or delivery, or both, of all materials and equipment required for the **Work**; and

9.1.4 The estimated amount in dollars the **Contractor** will claim on a monthly basis.

9.2 The proposed schedule shall be revised as directed by the **Engineer**, until finally approved by the Engineer, and after such approval, subject to the provisions of Article 11, shall be strictly adhered to by the **Contractor**.

9.3 If the **Contractor** shall fail to adhere to the approved progress schedule, or to the schedule as revised pursuant to Article 11, it shall promptly adopt such other or additional **Means and Methods of Construction** as will make up for the time lost and will assure completion in accordance with the approved progress schedule. The approval by the City of a progress schedule which is shorter than the time allotted under the **Contract** shall not create any liability for the **City** if the approved progress schedule is not met.

9.4 The **Contractor** will not receive any payments until the proposed progress schedule is submitted.

ARTICLE 10. REQUESTS FOR INFORMATION OR APPROVAL

10.1 From time to time as the **Work** progresses and in the sequence indicated by the approved progress schedule, the **Contractor** shall submit to the **Engineer** a specific request in writing for each item of information or approval required by the **Contractor**. These requests shall state the latest date upon which the information or approval is actually required by the **Contractor**, and shall be submitted in a reasonable time in advance thereof to enable the **Engineer** a sufficient time to act upon such submissions, or any necessary re-submissions thereof.

10.2 The **Contractor** shall not have any right to an extension of time on account of delays due to the **Contractor's** failure to submit requests for the required information or the required approval in accordance with the above requirements.

ARTICLE 11. NOTICE OF CONDITIONS CAUSING DELAY AND DOCUMENTATION OF DAMAGES CAUSED BY DELAY

11.1 After the commencement of any condition which is causing or may cause a delay in completion of the **Work**, including conditions for which the **Contractor** may be entitled to an extension of time, the following notifications and submittals are required:

11.1.1 Within seven (7) **Days** after the commencement of such condition, the **Contractor** must notify the **Engineer** in writing of the existence, nature and effect of such condition upon the approved progress schedule and the **Work**, and must state why and in what respects, if any, the condition is causing or may cause a delay.

11.1.2 If the **Contractor** shall claim to be sustaining damages for delay, by reason of any act or omission of the **City** or its agents, it shall submit to the **Commissioner** within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter for as long as such damages are incurred, verified statements of the details and the amounts of such damages, together with documentary evidence of such damages. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. Failure of the **Commissioner** to respond in writing to a written request for additional time within thirty (30) **Days** shall be deemed a denial of the request. On failure of the **Contractor** to fully comply with the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action arising under or by reason of this **Contract** shall not be different from or in excess of the statements made and documentation provided pursuant to this article.

11.2 Failure of the **Contractor** to strictly comply with the requirements of Article 11.1.1 may, in the discretion of the **Commissioner**, be deemed sufficient cause to deny any extension of time on account of delay arising out of such condition. Failure of the **Contractor** to strictly comply with the requirements of Articles 11.1.1 and 11.1.2 shall be deemed a conclusive waiver by the **Contractor** of any and all claims for damages for delay arising from such condition and no right to recover on such claims shall exist.

11.3 When appropriate and directed by the **Engineer**, the progress schedule shall be revised by the **Contractor** until finally approved by the **Engineer**. The revised progress schedule must be strictly adhered to by the **Contractor**.

ARTICLE 12. COORDINATION WITH OTHER CONTRACTORS

12.1 During the progress of the **Work**, **Other Contractors** may be engaged in performing other work or may be awarded other contracts for additional work on this **Project**. In that event, the **Contractor** shall coordinate the **Work** to be done hereunder with the work of such **Other Contractors** and the **Contractor** shall fully cooperate with such **Other Contractors** and carefully fit its own **Work** to that provided under other contracts as may be directed by the **Engineer**. The **Contractor** shall not commit or permit any act which will interfere with the performance of work by any **Other Contractors**.

12.2 If the **Engineer** shall determine that the **Contractor** is failing to coordinate its **Work** with the work of **Other Contractors** as the **Engineer** has directed, then the **Commissioner** shall have the right to withhold any payments otherwise due hereunder until the **Contractor** completely complies with the **Engineer's** directions.

12.3 The **Contractor** shall notify the **Engineer** in writing if any **Other Contractor** on this **Project** is failing to coordinate its work with the **Work** of this **Contract**. If the **Engineer** finds such charges to be true, the **Engineer** shall promptly issue such directions to the **Other Contractor** with respect thereto as the situation may require. The **City** shall not, however, be liable for any damages suffered by any **Other Contractor's** failure to coordinate its work with the **Work** of this **Contract** or by reason of the **Other Contractor's** failure to promptly comply with the directions so issued by the **Engineer**, or by reason of any **Other Contractor's** default in performance, it being understood that the **City** does not guarantee the responsibility or continued efficiency of any contractor. The **Contractor** agrees to make no claim against the **City** for any damages relating to or arising out of any directions issued by the **Engineer** pursuant to this article (including but not limited to the failure of any **Other Contractor** to comply or promptly comply with such directions), or the failure of the **Engineer** to issue any directions, or the failure of any **Other Contractor** to coordinate its work, or the default in performance of any **Other Contractor**.

12.4 The **Contractor** shall indemnify and hold the **City** harmless from any and all claims or judgments for damages and from costs and expenses to which the **City** may be subjected or which it may suffer or incur by reason of the **Contractor's** failure to comply with the **Engineer's** directions promptly; and the **Comptroller** shall have the right to exercise the powers reserved in Article 23 with respect to any claims which may be made for damages due to this **Contractor's** failure to comply with the **Engineer's** direction promptly. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.5 Should the **Contractor** sustain any damage through any act or omission of any **Other Contractor** having a contract with the **City** for the performance of work upon the **Site** or of work which may be necessary to be performed for the proper prosecution of the **Work** to be performed hereunder, or through any act or omission of a **Subcontractor** of such **Contractor**, the **Contractor** shall have no claim against the **City** for such damage, but shall have a right to recover such damage from the **Other Contractor** under the provision similar to the following provisions which apply to this **Contract** and have been or will be inserted in the contracts with such **Other Contractors**:

12.5.1 Should any **Other Contractor** having or who shall hereafter have a contract with the **City** for the performance of work upon the **Site** sustain any damage through any act or omission of the **Contractor** hereunder or through any act or omission of any **Subcontractor** of the **Contractor**, the **Contractor** agrees to reimburse such **Other Contractor** for all such damages and to defend at its own expense any suit based upon such claim and if any judgment or claims (even if the allegations of the suit are without merit) against the **City** shall be allowed the **Contractor** shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith and agrees to indemnify and hold the **City** harmless from all such claims. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.6 The **City's** right to indemnification hereunder shall in no way be diminished, waived or discharged, by its recourse to assessment of liquidated damages as provided in Article 15, or by the exercise of any other remedy provided for by **Contract** or by **Law**.

ARTICLE 13. EXTENSION OF TIME FOR PERFORMANCE

13.1 If performance by the **Contractor** is delayed for a reason set forth in Article 13.3, the **Contractor** may be allowed a reasonable extension of time in conformance with this article and the **PPB** Rules.

13.2 Any extension of time may be granted only by the **Commissioner** or by the Board for the Extension of Time (hereafter "Board") (as set forth below) upon written application by the **Contractor**.

13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

13.3.1 By the acts or omissions of the **City**, its officers, agents or employees; or

13.3.2 By the act or omissions of **Other Contractors** on this **Project**; or

13.3.3 By supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, excessive inclement weather, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes not brought about by any act or omission of the **Contractor**).

13.3.4 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **Commissioner** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

13.4 The **Contractor** shall not be entitled to receive a separate extension of time for each of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the **Work** as determined by the **Commissioner** or the Board, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the **Contractor** or of its **Subcontractors** or **Materialmen**, and would of itself (irrespective of the concurrent causes) have delayed the **Work**, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.

13.5 The determination made by the **Commissioner** or the Board on an application for an extension of time shall be binding and conclusive on the **Contractor**.

13.6 The granting of an application for an extension of time for causes of delay other than those herein referred to shall be entirely within the discretion of the **Commissioner** or the Board.

13.7 Permitting the **Contractor** to continue with the **Work** after the time fixed for its completion has expired, or after the time to which such completion may have been extended has expired, or the making of any payment to the **Contractor** after such time, shall in no way operate as a waiver on the part of the **City** of any of its rights under this **Contract**.

13.8 Application for Extension of Time:

13.8.1 Before the **Contractor's** time extension request will be considered, the **Contractor** shall notify the **Commissioner** of the condition which allegedly has caused or is causing the delay, and shall submit a written application to the **Commissioner** identifying:

13.8.1(a) The **Contractor**; the registration number; and **Project** description;

13.8.1(b) Liquidated damage assessment rate, as specified in the **Contract**;

13.8.1(c) Original bid amount;

13.8.1(d) The original **Contract** start date and completion date;

13.8.1(e) Any previous time extensions granted (number and duration); and

13.8.1(f) The extension of time requested.

13.8.2 In addition, the application for extension of time shall set forth in detail:

13.8.2(a) The nature of each alleged cause of delay in completing the **Work**;

13.8.2(b) The date upon which each such cause of delay began and ended and the number of **Days** attributable to each such cause;

13.8.2(c) A statement that the **Contractor** waives all claims except for those delineated in the application, and the particulars of any claims which the **Contractor** does not agree to waive. For time extensions for **Substantial Completion** and final completion payments, the application shall include a detailed statement of the dollar amounts of each element of claim item reserved; and

13.8.2(d) A statement indicating the **Contractor's** understanding that the time extension is granted only for purposes of permitting continuation of **Contract** performance and payment for **Work** performed and that the **City** retains its right to conduct an investigation and assess liquidated damages as appropriate in the future.

13.9 Analysis and Approval of Time Extensions:

13.9.1 For time extensions for partial payments, a written determination shall be made by the **Commissioner** who may, for good and sufficient cause, extend the time for the performance of the **Contract** as follows:

13.9.1(a) If the **Work** is to be completed within six (6) months, the time for performance may be extended for sixty (60) **Days**;

13.9.1(b) If the **Work** is to be completed within less than one (1) year but more than six (6) months, an extension of ninety (90) **Days** may be granted;

13.9.1(c) If the **Contract** period exceeds one (1) year, besides the extension granted in Article 13.9.1(b), an additional thirty (30) **Days** may be granted for each multiple of six (6) months involved beyond the one (1) year period; or

13.9.1(d) If exceptional circumstances exist, the **Commissioner** may extend the time for performance beyond the extensions in Articles 13.9.1(a), 13.9.1(b), and 13.9.1(c). In that event, the **Commissioner** shall file with the Mayor's Office of Contract Services a written explanation of the exceptional circumstances.

13.9.2 For extensions of time for **Substantial Completion** and final completion payments, the **Engineer**, in consultation with the **Commissioner**, shall prepare a written analysis of the delay (including a preliminary determination of the causes of delay, the beginning and end dates for each such cause of delay, and whether the delays are excusable under the terms of this **Contract**). The report shall be subject to review by and approval of the Board, which shall have authority to question its analysis and determinations and request additional facts or documentation. The report as reviewed and made final by the Board shall be made a part of the **Agency Contract** file. Neither the report itself nor anything contained therein shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

13.9.3 Approval Mechanism for Time Extensions for **Substantial Completion** or Final Completion Payments: An extension shall be granted only with the approval of the Board which is comprised of the **ACCO** of the **Agency**, the Corporation Counsel and the **Comptroller**, or their authorized representatives.

13.9.4 Neither the granting of any application for an extension of time to the **Contractor** or any other **Contractor** on this **Project** nor the papers, records or reports related to any application for or grant of an extension of time or determination related thereto shall be referred to or offered in evidence by the **Contractor** or its attorneys in any action or proceeding.

13.10 No Damage for Delay: The **Contractor** agrees to make no claim for damages for delay in the performance of this **Contract** occasioned by any act or omission to act of the **City** or any of its representatives, and agrees that all it may be entitled to on account of any such delay is an extension of time to complete performance of the **Work** as provided herein.

ARTICLE 14. COMPLETION AND FINAL ACCEPTANCE OF THE WORK

14.1 Date for **Substantial Completion**: The **Contractor** shall substantially complete the **Work** within the time fixed in Schedule A of the General Conditions, or within the time to which such **Substantial Completion** may be extended.

14.2 Determining the Date of **Substantial Completion**: The **Work** will be deemed to be substantially complete when the two conditions set forth in Articles 14.2.1 and 14.2.2 have been met. The **Commissioner** will then issue a Certificate of **Substantial Completion.**

14.2.1 Inspection: The **Engineer** has inspected the **Work** and has made a written determination that it is substantially complete.

14.2.2 Approval of Final Punch List and Date for **Final Acceptance**: Following inspection of the **Work**, the **Engineer** shall furnish the **Contractor** a final punch list, specifying all items of **Work** to be completed. The **Contractor** shall then submit to the **Engineer** dates for the completion of each specified item of **Work**. Within a reasonable time after receipt, the **Engineer**, in a written notification to the **Contractor**, shall approve the **Contractor's** completion dates or, if they are unable to agree, shall establish dates for the completion of each item of **Work**. The latest completion date specified shall be the date for **Final Acceptance** of the **Work**.

14.3 Determining the Date of **Final Acceptance**: The **Work** will be accepted as final and complete as of the date of the **Engineer's** inspection if, upon such inspection, the **Engineer** finds that all items on the **Final Approved Punch List** are complete and no further **Work** remains to be done. The **Commissioner** will then issue a written determination of **Final Acceptance**.

14.4 Request for Inspection: Inspection of the **Work** by the **Engineer** for the purpose of **Substantial Completion** or **Final Acceptance** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.5 Request for Re-inspection: If upon inspection for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer** determines that there are items of **Work** still to be performed, the **Contractor** shall promptly perform them and then request a re-inspection. If upon re-inspection, the **Engineer** determines that the **Work** is substantially complete or finally accepted, the date of such re-inspection shall be the date of **Substantial Completion** or **Final Acceptance**. Re-inspection by the **Engineer** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.6 Initiation of Inspection by the **Engineer**: If the **Contractor** does not request inspection or re-inspection of the **Work** for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer** may initiate such inspection or re-inspection.

ARTICLE 15. LIQUIDATED DAMAGES

15.1 In the event the **Contractor** fails to complete the **Work** within the time fixed for such completion in Schedule A of the General Conditions, plus authorized time extensions, or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the sum fixed in Schedule A of the General Conditions, for each and every **Day** that the time consumed in completing the **Work** exceeds the time allowed therefor; which said sum, in view of the difficulty of accurately ascertaining the loss which the **City** will suffer by reason of delay in the completion of the **Work** hereunder, is hereby fixed and agreed as the liquidated damages that the **City** will suffer by reason of such delay, and not as a penalty. This article shall apply to the **Contractor** if it is defaulted pursuant to Chapter X of this **Contract**. Neither the failure to assess liquidated damages nor the granting of any time extension shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

15.2 Liquidated damages received hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the **City's** right to indemnification, or the **Contractor's** obligation to indemnify the **City**, or to any other remedy provided for in this **Contract** or by **Law**.

15.3 The **Commissioner** may deduct and retain out of the monies which may become due hereunder, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the **City**, the **Contractor** shall be liable to pay the difference.

ARTICLE 16. OCCUPATION OR USE PRIOR TO COMPLETION

16.1 Unless otherwise provided for in the specifications, the **Commissioner** may take over, use, occupy or operate any part of the **Work** at any time prior to **Final Acceptance**, upon written notification to the **Contractor**. The **Engineer** shall inspect the part of the **Work** to be taken over, used, occupied, or operated, and will furnish the **Contractor** with a written statement of the **Work**, if any, which remains to be performed on such part. The **Contractor** shall not object to, nor interfere with, the **Commissioner's** decision to exercise the rights granted by this article. In the event the **Commissioner** takes over, uses, occupies, or operates any part of the **Work**:

16.1.1 the **Commissioner** shall issue a written determination of **Substantial Completion** with respect to such part of the **Work**;

16.1.2 the **Contractor** shall be relieved of its absolute obligation to protect such part of the unfinished **Work** in accordance with Article 7;

16.1.3 the **Contractor's** guarantee on such part of the **Work** shall begin on the date of such use by the **City**; and;

16.1.4 the **Contractor** shall be entitled to a return of so much of the amount retained in accordance with Article 21 as it relates to such part of the **Work**, except so much thereof as may be retained under Articles 24 and 44.

CHAPTER IV
SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17. SUBCONTRACTS

17.1 The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price fixed in Schedule A of the General Conditions, without prior written permission from the **Commissioner**. All subcontracts made by the **Contractor** shall be in writing. No work may be performed by a **Subcontractor** prior to the **Contractor** entering into a written subcontract with the **Subcontractor** and complying with the provisions of this Article 17.

17.2 Before making any subcontracts, the **Contractor** shall submit a written statement to the **Commissioner** giving the name and address of the proposed **Subcontractor**, the portion of the **Work** and materials which it is to perform and furnish, the cost of the subcontract, the VENDEX questionnaire if required, and any other information tending to prove that the proposed **Subcontractor** has the necessary facilities, skill, integrity, past experience and financial resources to perform the **Work** in accordance with the terms and conditions of this **Contract**.

17.3 If an approved **Subcontractor** elects to subcontract any portion of its subcontract, the proposed sub-subcontract shall be submitted in the same manner as directed above.

17.4 The **Commissioner** will notify the **Contractor** in writing whether the proposed **Subcontractor** is qualified or not qualified. If the proposed **Subcontractor** is not qualified, the **Contractor** may submit another proposed **Subcontractor** unless the **Contractor** decides to do the **Work**. No **Subcontractor** shall be permitted on the **Site** unless approved.

17.5 Before entering into any subcontract hereunder, the **Contractor** shall inform the **Subcontractor** fully and completely of all provisions and requirements of this **Contract** relating either directly or indirectly to the **Work** to be performed and the materials to be furnished under such subcontract, and every such **Subcontractor** shall

expressly stipulate that all labor performed and materials furnished by the **Subcontractor** shall strictly comply with the requirements of this **Contract**.

17.6 Documents given to a **Subcontractor** for the purpose of soliciting the **Subcontractor's** bid shall include either a copy of the bid cover or a separate information sheet setting forth the **Project** name, the **Contract** number (if available), the **Agency** (as noted in Article 2.1.6), and the **Project's** location.

17.7 The **Commissioner's** approval of a **Subcontractor** shall not relieve the **Contractor** of any of its responsibilities, duties and liabilities hereunder. The **Contractor** shall be solely responsible to the **City** for the acts or defaults of its **Subcontractor** and of such **Subcontractor's** officers, agents and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the **Contractor** to the extent of its subcontract.

17.8 The **Contractor** shall be responsible for ensuring that all **Subcontractors** performing **Work** at the **Site** have either their own insurance coverage or are covered by the **Contractor's** insurance as required by Article 22.

17.9 The **Contractor** shall promptly, upon request, file with the **Engineer** a conformed copy of the subcontract and its cost. The subcontract shall provide the following:

17.9.1 Payment to **Subcontractors**: The agreement between the **Contractor** and its **Subcontractors** shall contain the same terms and conditions as to method of payment for **Work**, labor and materials, and as to retained percentages, as are contained in this **Contract**.

17.9.2 Prevailing Rate of Wages: The agreement between the **Contractor** and its **Subcontractors** shall include the prevailing wage rates and supplemental benefits to be paid in accordance with Labor Law Section 220.

17.9.3 Section 6-123 of the Administrative Code: Pursuant to the requirements of Section 6-123 of the Administrative Code, every agreement between the **Contractor** and its **Subcontractors** in excess of $50,000 shall include a provision that the **Subcontractor** shall not engage in any unlawful discriminatory practice as defined in Title VIII of the Administrative Code (Section 8-101 et. seq.).

17.10 The **Commissioner** may deduct from the amounts certified under this **Contract** to be due to the **Contractor**, the sum or sums due and owing from the **Contractor** to the **Subcontractors** according to the terms of the said subcontracts, and in case of dispute between the **Contractor** and its **Subcontractor,** or **Subcontractors**, as to the amount due and owing, the **Commissioner** may deduct and withhold from the amounts certified under this **Contract** to be due to the **Contractor** such sum or sums as may be claimed by such **Subcontractor**, or **Subcontractors**, in a sworn affidavit, to be due and owing until such time as such claim or claims shall have been finally adjusted.

17.11 On **Contracts** where 100% performance bonds and payment bonds are executed, the **Contractor** shall include on each requisition for payment the following data: **Subcontractor's** name, value of the subcontract, total amount previously paid to **Subcontractor** for **Work** previously requisitioned, and the amount, including retainage, to be paid to the **Subcontractor** for **Work** included in the requisition.

17.12 On **Contracts** where performance bonds and payment bonds are not executed, the **Contractor** shall include with each requisition for payment submitted hereunder, a signed statement from each and every **Subcontractor** and/or **Materialman** for whom payment is requested in such requisition. Such signed statement shall be on the letterhead of the **Subcontractor** and/or **Materialman** for whom payment is requested and shall (i) verify that such **Subcontractor** and/or **Materialman** has been paid in full for all work performed and/or material supplied to date, exclusive of any amount retained and any amount included on the current requisition, and (ii) state the total amount of retainage to date, exclusive of any amount retained on the current requisition.

ARTICLE 18. ASSIGNMENTS

18.1 The **Contractor** shall not assign, transfer, convey or otherwise dispose of this **Contract**, or the right to execute it, or the right, title or interest in or to it or any part thereof, or assign, by power of attorney or otherwise any of the monies due or to become due under this **Contract**, unless the previous written consent of the **Commissioner** shall first be obtained thereto, and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments.

18.2 Such assignment, transfer, or conveyance shall not be valid until filed in the office of the **Commissioner** and the **Treasurer**, with the written consent of the **Commissioner** endorsed thereon or attached thereto.

18.3 Failure to obtain the previous written consent of the **Commissioner** to such an assignment, transfer or conveyance, may result in the revocation and annulment of this **Contract**. The **City** shall thereupon be relieved and discharged from any further liability to the **Contractor**, its assignees, transferees or sublessees, who shall forfeit and lose all monies therefor earned under the **Contract**, except so much as may be required to pay the **Contractor's** employees.

18.4 The provisions of this clause shall not hinder, prevent, or affect an assignment by the **Contractor** for the benefit of its creditors made pursuant to the **Laws** of the State of New York.

18.5 This **Contract** may be assigned by the **City** to any corporation, agency or instrumentality having authority to accept such assignment.

CHAPTER V
CONTRACTOR'S SECURITY AND GUARANTY

ARTICLE 19. SECURITY DEPOSIT

19.1 The bid deposit, if required, shall be retained by the **Comptroller** as security for the **Contractor's** faithful performance of the **Contract** and will be returned to the **Contractor** only after the sum retained under Article 21 equals the amount of the bid deposit, subject to the other provisions of this **Contract**. If performance and payment bonds are required, any bid security posted shall be returned within a reasonable time after posting of such bonds and execution of this **Contract** by the **City**. When no partial payments are provided, the bid deposit will be released when final payment is certified to the **Comptroller** for payment.

19.2 If the **Contractor** is declared in default under Article 48 prior to the return of the deposit, or if any claim is made such as referred to in Article 23, the amount of such deposit, or so much thereof as the **Comptroller** may deem necessary, may be retained and then applied by the **Comptroller**:

19.2.1 To compensate the **City** for any expense, loss or damage suffered or incurred by reason of or resulting from such default, including the cost of re-letting and liquidated damages; or

19.2.2 To indemnify the **City** against any and all claims.

ARTICLE 20. PAYMENT GUARANTEE

20.1 On **Contracts** where 100% performance bonds and payment bonds are executed, this article does not apply.

20.2 In the event the terms of this **Contract** do not require the **Contractor** to provide a payment bond, the **City** shall, in accordance with the terms of this article, guarantee payment of all lawful demands for:

20.2.1 Wages and compensation for labor performed and/or services rendered; and

20.2.2 Materials, equipment, and supplies provided, whether incorporated into the **Work** or not, when demands have been filed with the **City** as provided hereinafter by any person, firm, or corporation which furnished labor, material, equipment, supplies, or any combination thereof, in connection with the **Work** performed hereunder (hereinafter referred to as the "beneficiary") at the direction of the **City** or the **Contractor**.

20.3 The provisions of Article 20.2 are subject to the following limitations and conditions:

20.3.1 The guarantee is made for the benefit of all beneficiaries as defined in Article 20.2 provided that those beneficiaries strictly adhere to the terms and conditions of this Article 20.3.

20.3.2 Nothing in this article shall prevent a beneficiary providing labor, services or material for the **Work** from suing the **Contractor** for any amounts due and owing the beneficiary by the **Contractor**.

20.3.3 All demands made against the **City** pursuant to this article shall be made within four (4) months from the date payment is due on the invoice or invoices submitted by the beneficiary to the **Contractor** for labor or **Work** done or for materials or supplies delivered, or, if the demand is for wages, four (4) months from the date the wages were due to be paid to the beneficiary.

20.3.4 All demands made against the **City** by such beneficiary shall be presented to the **Engineer** along with all written documentation concerning the demand which the **Engineer** deems appropriate or necessary, which may include, but shall not be limited to: the subcontract; any invoices presented to the **Contractor** for payment; the notarized statement of the beneficiary that the demand is due and payable, that a request for payment has been made of the **Contractor** and that the demand has not been paid by the **Contractor** within the time allowed for such payment by the subcontract; and copies of any correspondence between the beneficiary and the **Contractor** concerning such demand. The **City** shall notify the **Contractor** that a demand has been made. The **Contractor** shall inform the **City** of any defenses to the demand, and shall forward to the **City** any documents the **City** requests concerning the demand.

20.3.5 The **City** shall make payment only if, after considering all defenses presented by the **Contractor**, it determines that the payment is due and owing to the beneficiary making the demand.

20.3.6 The **City** will not initiate the payment process of this article or make payment on a demand where the beneficiary making the demand has filed a lien against the **Work** or otherwise sues the **City** prior to receiving a written notice from the **City** that it will not pay the demand.

20.3.7 No beneficiary shall be entitled to interest from the **City**, or to any other costs, including, but not limited to, attorney's fees.

20.4 Upon the receipt by the **City** of a demand pursuant to this article, the **City** may withhold from any payment otherwise due and owing to the **Contractor** under this **Contract** an amount sufficient to satisfy the demand.

20.4.1 In the event the **City** determines that the demand is valid, the **City** shall notify the **Contractor** of such determination and the amount thereof, and direct the **Contractor** to immediately pay such amount to the beneficiary. In the event the **Contractor**, within seven (7) days of receipt of such notification from the **City**, fails to pay the beneficiary, such failure shall constitute an automatic

and irrevocable assignment of payment by the **Contractor** to the beneficiary for the amount of the demand determined by the **City** to be valid. The **Contractor**, without further notification or other process, hereby gives its unconditional consent to such assignment of payment to the beneficiary and authorizes the **City**, on its behalf, to take all necessary actions to implement such assignment of payment, including without limitation the execution of any instrument or documentation necessary to effectuate such assignment.

In the event that the amount otherwise due and owing to the **Contractor** by the **City** is insufficient to satisfy such demand, the **City** may, at its option, require payment from the **Contractor** of an amount sufficient to cover such demand and exercise any other right to require or recover payment which the **City** may have under **Law** or **Contract**.

20.4.2 In the event the **City** determines that the demand is invalid, any amount withheld pending the City's review of such demand shall be paid to the **Contractor**; provided, however, no lien has been filed. In the event a lien has been filed, the terms and conditions set forth in Article 23 shall apply.

20.5 The provisions of this article shall not prevent the **City** and the **Contractor** from resolving disputes in accordance with the **PPB** Rules, where applicable.

20.6 In the event the **City** determines that the beneficiary is entitled to payment pursuant to this article, such determination and any defenses and counterclaims raised by the **Contractor** shall be taken into account in evaluating the **Contractor's** performance.

20.7 Nothing in this article shall relieve the **Contractor** of the obligation to pay the claims of all persons with valid and lawful claims against the **Contractor** relating to the **Work**.

20.8 The **Contractor** shall not require any performance, payment or other bonds of any **Subcontractor** if this **Contract** does not require such bonds of the **Contractor**.

20.9 The payment guarantee made pursuant to this article shall be construed in a manner consistent with Section 137 of the State Finance Law and shall afford to persons furnishing labor or materials to the **Contractor** or his **Subcontractors** in the prosecution of the **Work** under this **Contract** all of the rights and remedies afforded to such persons by such section, including but not limited to, the right to commence an action against the **City** on the payment guarantee provided by this article within the one year limitations period set forth in Section 137(4)(b).

ARTICLE 21. RETAINED PERCENTAGE

21.1 If this **Contract** requires 100% performance and payment security, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.2 If this **Contract** does not require 100% performance and payment security and if the price for which this **Contract** was awarded does not exceed $500,000, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.3 If this **Contract** does not require 100% performance and payment security and if the price for which this **Contract** was awarded exceeds $500,000, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, up to ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher. The percentage to be retained is set forth in Schedule A of the General Conditions.

ARTICLE 22. INSURANCE

22.1 Types of Insurance: From the date the **Contractor** is required to provide Proof of Insurance pursuant to Article 22.3.1 through the date of completion of all required **Work** (including punch list work as certified in writing by the **Resident Engineer)**, the **Contractor** shall effect and maintain the following types of insurance if and as indicated in Schedule A of the General Conditions (with the minimum limits and special conditions specified in Schedule A). Such insurance shall be issued by companies that meet the standards of Article 22.2.1 and shall be primary (and non-contributing) to any insurance or self-insurance maintained by the **City.**

22.1.1 Commercial General Liability Insurance: The **Contractor** shall provide a Commercial General Liability Insurance policy covering the **Contractor** as Named Insured and the **City** as an Additional Insured. This policy shall protect the **City** and the **Contractor** from claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this **Contract**. Coverage under this policy shall be at least as broad as that provided by ISO Form CG 0001 (10/01 ed.), must be "occurrence" based rather than "claims-made", and shall include, without limitation, the following types of coverage: Premises Operations, Products and Completed Operations, Contractual Liability (including the tort liability of another assumed in a contract), Broad Form Property Damage, Medical Payments, Independent Contractors, Personal Injury (Contractual Exclusion deleted), Explosion, Collapse and Underground Property, and Incidental Malpractice. If such insurance contains an aggregate limit, it shall apply separately to this **Project.**

22.1.1(a) Such Commercial General Liability Insurance shall name the City, together with its officials and employees, as an Additional Insured under this policy. Coverage for the City as Additional Insured shall specifically include the City's officials and employees, and shall be at least as broad as either Insurance Services Office ("ISO") Form CG 20 10 (07/04 ed.) or Form CG 20 33 (07/04 ed.) and shall provide completed operations coverage at least as broad as CG 20 37 (07/04 ed.).

22.1.1(b) If this **Contract** is equal to or greater than Ten Million Dollars ($10,000,000.00), each Commercial General Liability Insurance policy provided shall contain each of the following endorsements:

22.1.1(b)(i) The Duties in the Event of Occurrence, Claim or Suit condition of the policy is amended per the following: If and insofar as knowledge of an "occurrence", "claim", or "suit" is relevant to the City of New York as Additional Insured under this policy, such knowledge by an agent, servant, official, or employee of the City of New York will not be considered knowledge on the part of the City of New York of the "occurrence", "claim", or "suit" unless the following position shall have received notice thereof from such agent, servant, official, or employee: Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department; and

22.1.1(b)(ii) Any notice, demand or other writing by or on behalf of the Named Insured to the Insurance Company shall also be deemed to be a notice, demand, or other writing on behalf of the City as Additional Insured. Any response by the Insurance Company to such notice, demand or other writing shall be addressed to Named Insured and to the City at the following addresses: Insurance Unit, NYC Comptroller's Office, 1 Centre Street – Room 1222, New York, N.Y. 10007; and Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, NY 10007.

22.1.2 Workers' Compensation Insurance and Disability Benefits Insurance: The **Contractor** shall provide, and ensure that each **Subcontractor** provides, Workers Compensation Insurance and Disability Benefits Insurance in accordance with the **Laws** of the State of New York on behalf of all employees providing services under this **Contract** (except for those qualifying for insurance pursuant to Article 22.1.4).

22.1.3 Employers' Liability Insurance: The **Contractor** shall provide, and ensure that each **Subcontractor** provides, Employers Liability Insurance affording compensation due to bodily injury by accident or disease sustained by any employee arising out of and in the course of his/her employment under this Contract (except for those qualifying for insurance pursuant to Article 22.1.4).

22.1.4 United States Longshoremen's and Harbor Workers Act and/or Jones Act Insurance: The **Contractor** shall provide, and ensure that each **Subcontractor** provides, insurance in accordance with the United States Longshoremen's and Harbor Workers Act and/or the Jones Act, on behalf of all qualifying employees providing services under this **Contract**.

22.1.5 Builders' Risk Insurance: The **Contractor** shall provide a Builders' Risk Insurance policy covering all risks in completed value form. Such policy shall cover the total value of the **Work** performed in accordance with Schedule A, as well as the value of any equipment, supplies and/or material for the **Project** that may be in storage (on or off the **Site**) or in transit. The policy shall cover the cost of removing debris, including demolition as may be legally necessary by the operation of any law, ordinance or regulation, and for loss or damage to any owned, borrowed, leased or rented capital equipment, tools, including tools of their agents and employees, staging towers and forms, and property of the **City** held in their care, custody and/or control. Such policy shall name as insureds the **City**, the **Contractor,** and its **Subcontractors**. The Builders' Risk policy shall contain the following endorsements:

22.1.5(a) The **City** and the **Contractor** shall be named as loss payee for the **Work** in order of precedence, as their interest may appear; and

22.1.5(b) In the event the loss occurs at an occupied facility, the policy shall permit occupancy without the consent of the Insurance Company; and

22.1.5(c) In the event that the insurance policy has been issued by a mutual insurance company, the following language shall be included: "The City of New York is not liable for any premium or assessment under this policy of insurance. The First Named Insured is solely liable therefor."

22.1.6 Comprehensive Business Automobile Liability Insurance: The **Contractor** shall provide a Comprehensive Business Automobile Liability policy for liability arising out of any owned, non-owned, leased and hired vehicles to be used in connection with this **Contract**. Coverage should be at least as broad as ISO Form CA0001, ed. 10/01.

22.1.6(a) If autos are used for transporting hazardous materials, the Automobile Liability Insurance shall be endorsed to provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90.

22.1.7 Pollution/Environmental Liability Insurance: The **Contractor** shall provide Pollution/Environmental Liability Insurance covering bodily injury and property damage, including loss of use of damaged property or of property that has not been physically injured. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos), including any loss, cost or expense incurred as a

result of any cleanup of pollutants (including asbestos) or in the investigation, settlement or defense of any claim, suit, or proceedings against the **City** arising from the operations under this **Contract**. Such insurance shall be in the **Contractor's** name and list the **City** as an Additional Insured. Coverage for the **City** as Additional Insured shall specifically include the **City's** officials and employees, and shall be at least as broad as provided to the **Contractor** for this **Project**.

22.1.7(a) If such coverage is written on a claims-made policy, such policy shall have a retroactive date on or before the effective date of this **Contract**, and continuous coverage shall be maintained, or an extended discovery period exercised, for a period of not less than three years from the time the **Work** under this **Contract** is completed.

22.1.8 Marine Insurance:

22.1.8(a) Marine Protection and Indemnity Insurance: The **Contractor** shall provide a Marine Protection and Indemnity policy with coverage at least as broad as policy form SP-23. The policy shall provide coverage for the **Contractor** and for the **City** (together with its officials and employees) as Additional Insured for bodily injury and property damage arising from marine operations under this **Contract** including injury or death of crew members (if not fully provided through other insurance), damage to piers, wharves and other fixed or movable structures and loss of or damage to any other vessel or craft, or to property on such other vessel or craft, not caused by collision.

22.1.8(b) Ship Repairers Legal Liability Insurance: The **Contractor** shall provide a Ship Repairers Legal Liability Insurance policy covering all repair operations under this **Contract** at or in the vicinity of a designated approved port or yard under this **Contract**. The policy shall provide coverage from the point of acceptance of care custody and control of any **City** vessel. The policy shall provide Bailee Coverage for any **City** vessel in the **Contractor's** care, custody and control and coverage for damage to property of others caused by any **City** vessel in the **Contractor's** care custody and control.

22.1.8(c) Collision Liability/Towers Liability Insurance: The **Contractor** shall provide a Collision Liability/Towers Liability Insurance policy with coverage for the **Contractor** and for the **City** (together with its officials and employees) as Additional Insured at least as broad as the American Institute Tug Form (08/01/76) for all tugs used under this **Contract** and Collision Liability per American Institute Hull Clauses (6/2/77).

22.1.8(d) Marine Pollution Liability Insurance: The **Contractor** shall provide a Marine Pollution Liability Insurance policy covering itself as Named Insured and the **City** (together with its officials and employees) as Additional Insured for liability arising from the discharge or substantial threat of a discharge of oil, or from the release or threatened release of a hazardous substance including injury to, or economic losses resulting from, the destruction of or damage to real property, personal property or natural resources. Coverage under this policy shall be at least as broad as that provided by Water Quality Insurance Syndicate Form (09/98 ed.).

22.1.9 The **Contractor** shall provide such other types of insurance, at such minimum limits, as are specified in Schedule A of the General Conditions.

22.2 General Requirements for Insurance Policies:

22.2.1 All required insurance policies shall be maintained with companies that may lawfully issue the required policy and have an A.M. Best rating of at least A- VII or a Standard and Poor's rating of at least AA, unless prior written approval is obtained from the Mayor's Office of Operations.

22.2.2 The **Contractor** shall be solely responsible for the payment of all premiums for all required policies and all deductibles and self-insured retentions to which such policies are subject, whether or not the **City** is an insured under the policy.

22.2.3 In his/her sole discretion, the **Commissioner** may, subject to the approval of the **Comptroller** and the Corporation Counsel, accept Letters of Credit and/or custodial accounts in lieu of required insurance.

22.2.4 The **City's** limits of coverage for all types of insurance required pursuant to Schedule A of the General Conditions shall be the greater of (i) the minimum limits set forth in Schedule A or (ii) the limits provided to the **Contractor** as Named Insured under all primary, excess and umbrella policies of that type of coverage.

22.2.5 All required insurance policies, except for insurance required pursuant to Sections 22.1.2, 22.1.3, and 22.1.4, shall contain the following endorsement: "This policy may not be cancelled, terminated, modified or changed unless thirty (30) days prior written notice is sent by the Insurance Company to the Named Insured (or First Named Insured, as appropriate), the **Commissioner**, and to the **Comptroller**, attn: Office of Contract Administration, Municipal Building, Room 1005, New York, New York 10007."

22.3 Proof of Insurance:

22.3.1 Within ten (10) **Days** of award, the **Contractor** shall, for each policy required under this **Contract**, except for Workers Compensation Insurance and Disability Benefits Insurance and builders' risk insurance, file a Certificate of Insurance with the **Commissioner** pursuant to Article 22.6. For Workers' Compensation Insurance and Disability Benefits Insurance, the **Contractor** shall file proof of insurance in a form acceptable to the **Commissioner** within ten (10) **Days** of award. Accord forms are not acceptable proof of workers' compensation coverage. The Contractor must submit one of the following forms to the Department, or another form acceptable to the Department: C-105.2 -- Certificate of Workers' Compensation Insurance, or U-26.3 -- State Insurance Fund Certificate of Workers' Compensation Insurance. For builders' risk insurance, the **Contractor** shall file a Certificate of Insurance with the **Commissioner** at the direction of the **Commissioner** but in any event no later than ten (10) **Days** prior to commencement of the **Work**.

22.3.1(a) All Certificates of Insurance shall be in a form acceptable to the **City** and shall certify the issuance and effectiveness of the types of insurance specified in Schedule A, each with the specified minimum limits and evidence of the compliance with the Additional Insured or Named Insured provisions of Articles 22.1.1(a), 22.1.5, 22.1.7, and 22.1.8, as applicable. All Certificate(s) of Insurance shall be accompanied by either a duly executed "Certification by Broker" in the form contained in Part II of Schedule A or completed copies of all policies referenced in the Certificate of Insurance. In the absence of completed policies, binders are acceptable.

22.3.2 Certificates of Insurance confirming renewals of insurance shall be submitted to the **Commissioner** prior to the expiration date of coverage of policies required under this **Contract**. Such Certificates of Insurance shall comply with the requirements of Article 22.3.1(a) and, if applicable, Article 22.3.1(b).

22.3.3 The **Contractor** shall be obligated to provide the **City** with a copy of any policy required by this Article 22 upon the demand for such policy by the **Commissioner** or the New York City Law Department.

22.4 Operations of the Contractor:

22.4.1 The **Contractor** shall not commence the **Work** unless and until all required certificates have been submitted to and accepted by the **Commissioner**. Acceptance by the **Commissioner** of a certificate hereunder does not excuse the **Contractor** from securing a policy consistent with all provisions of this Article or of any liability arising from its failure to do so.

22.4.2 The **Contractor** shall be responsible for providing continuous insurance coverage in the manner, form, and limits required by this **Contract** and shall be authorized to perform **Work** only during the effective period of all required coverage.

22.4.3 In the event that any of the required insurance policies lapse, are revoked, suspended or otherwise terminated, for whatever cause, the **Contractor** shall immediately stop all **Work**, and shall not recommence **Work** until authorized in writing to do so by the **Commissioner**. Upon quitting the **Site**, except as otherwise directed by the Commissioner, the **Contractor** shall leave all plant, materials, equipment, tools and supplies on the **Site**. **Contract** time shall continue to run during such periods and no extensions of time will be granted. The **Commissioner** may also declare the **Contractor** in default for failure to maintain required insurance.

22.5 The **City** as Additional Insured or Loss Payee under **Subcontractors'** Insurance. The Contractor shall ensure that each **Subcontractor** name the **City** as Additional Insured or loss payee, as appropriate, under all policies covering **Work** performed by such **Subcontractor** under this **Contract**. The **City**'s coverage as Additional Insured shall include the **City's** officials and employees and be at least as broad as that provided to the **Contractor**. The foregoing requirements shall not apply to insurance provided pursuant to Articles 22.1.2, 22.1.3, and 22.1.4.

22.6 Wherever reference is made in Article 7 or this Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth in Schedule A of the General Conditions. In the event no address is set forth in Schedule A, such documents are to be sent to the **Commissioner's** address as provided elsewhere in this **Contract**.

22.7 If the **Contract** involves disposal of hazardous materials, the **Contractor** shall dispose such materials only at sites where the disposal site operator maintains Pollution Legal Liability Insurance in the amount of at least $2,000,000 for losses arising from such disposal site.

22.8 Materiality/Non-Waiver: The **Contractor's** failure to secure policy(ies) in complete conformity with this Article, or to give the Insurance Company timely notice of any sort required in this **Contract** on behalf of the **City**, or to do anything else required by this Article shall constitute a material breach of this **Contract**. Such breach shall not be waived or otherwise excused by any action or inaction by the **City** at any time.

22.9 Other Remedies: Insurance coverage in the minimum amounts provided for herein shall not relieve the **Contractor** or **Subcontractors** of any liability under this **Contract**, nor shall it preclude the **City** from exercising any rights or taking such other actions as are available to it under any other provisions of this **Contract** or **Law**.

ARTICLE 23. MONEY RETAINED AGAINST CLAIMS

23.1 If any claim shall be made by any person or entity (including **Other Contractors** with the **City** on this **Project**) against the **City** or against the **Contractor** and the **City** for any of the following:

(a) An alleged loss, damage, injury, theft or vandalism of any of the kinds referred to in Articles 7 and 12, plus the reasonable costs of defending the City, which in the opinion of the **Comptroller** may not be paid by an insurance company (for any reason whatsoever); or

(b) An infringement of copyrights, patents or use of patented articles, tools, etc., as referred to in Article 57; or

(c) Damage claimed to have been caused directly or indirectly by the failure of the **Contractor** to perform the **Work** in strict accordance with this **Contract,**

the amount of such claim, or so much thereof as the **Comptroller** may deem necessary, may be withheld by the **Comptroller**, as security against such claim, from any money due hereunder. The **Comptroller**, in his/her discretion, may permit the **Contractor** to substitute other satisfactory security in lieu of the monies so withheld.

23.2 If an action on such claim is timely commenced and the liability of the **City**, or the **Contractor**, or both, shall have been established therein by a final judgment of a Court of competent jurisdiction, or if such claim shall have been admitted by the **Contractor** to be valid, the **Comptroller** shall pay such judgment or admitted claim out of the monies retained by the **Comptroller** under the provisions of this article, and return the balance, if any, without interest, to the **Contractor**.

23.3 Liens: If at any time before or within thirty (30) **Days** after the **Work** is completed and accepted by the **City**, any persons claiming to have performed any labor or furnished any material toward the performance or completion of this **Contract**, shall file with the **Agency** and with the **Treasurer** any notice as is described in the New York State Lien **Law**, or any act of the Legislature of the State of New York, the **City** shall retain, from the monies due or to become due under this **Contract**, so much of such monies as shall be sufficient to pay the amount claimed in said notice, together with the reasonable costs of any action or actions brought or that may be brought to enforce such lien. The monies so retained shall be held by the **City** until the lien thereon created by the said act and the filing of the said notice shall be discharged pursuant to **Law**.

ARTICLE 24. MAINTENANCE AND GUARANTY

24.1 The **Contractor** shall promptly repair, replace, restore or rebuild, as the **Commissioner** may determine, any finished **Work** in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of **Substantial Completion** (or use and occupancy in accordance with Article 16), except where other periods of maintenance and guarantee are provided for.

24.2 As security for the faithful performance of its obligations hereunder, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to one (1%) percent of the price (or the amount fixed in Schedule A of the General Conditions) in cash or certified check upon a state or national bank and trust company or a check of such bank and trust company signed by a duly authorized officer thereof and drawn to the order of the **Comptroller**, or obligations of the **City**, which the **Comptroller** may approve as of equal value with the sum so required.

24.3 In lieu of the above, the **Contractor** may make such security payment to the **City** by authorizing the **Commissioner** in writing to deduct the amount from the **Substantial Completion** payment which shall be deemed the deposit required above.

24.4 If the **Contractor** has faithfully performed all of its obligations hereunder the **Commissioner** shall so certify to the **Comptroller** within five (5) **Days** after the expiration of one (1) year from the date of **Substantial Completion** and acceptance of the **Work** or within thirty (30) **Days** after the expiration of the guarantee period fixed in the **Specifications.** The security payment shall be repaid to the **Contractor** without interest within thirty (30) **Days** after certification by the **Commissioner** to the **Comptroller** that the **Contractor** has faithfully performed all of its obligations hereunder.

24.5 Notice by the **Commissioner** to the **Contractor** to repair, replace, rebuild or restore such defective or damaged **Work** shall be timely, pursuant to this article, if given not later than ten (10) **Days** subsequent to the expiration of the one (1) year period or other periods provided for herein.

24.6 If the **Contractor** shall fail to repair, replace, rebuild or restore such defective or damaged **Work** promptly after receiving such notice, the **Commissioner** shall have the right to have the **Work** done by others in the same manner as provided for in the completion of a defaulted **Contract**, under Article 51.

24.7 If the security payment so deposited is insufficient to cover the cost of such **Work**, the **Contractor** shall be liable to pay such deficiency on demand by the **Commissioner**.

24.8 The **Engineer's** certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective **Work** when performed by one other than the **Contractor**, shall be binding and conclusive upon the **Contractor** as to the amount thereof.

24.9 The **Contractor** shall obtain all manufacturers' warranties and guaranties of all equipment and materials required by this **Contract** in the name of the **City** and shall deliver same to the **Commissioner**. All of the **City's** rights and title and interest in and to said manufacturers' warranties and guaranties may be assigned by the **City** to any subsequent purchasers or lessees of the premises.

CHAPTER VI
CHANGES, EXTRA WORK AND DOCUMENTATION OF CLAIM

ARTICLE 25. CHANGES

25.1 Changes may be made to this **Contract** only as duly authorized in writing by the **Commissioner** in accordance with the **Laws** and this **Contract**. All such changes, modifications and amendments will become a part of the **Contract. Work** so ordered shall be performed by the **Contractor.**

25.2 **Contract** changes will be made only for **Work** necessary to complete the **Work** included in the original scope of the **Contract** and/or for non-material changes to the scope of the **Contract**. Changes are not permitted for any material alteration in the scope of **Work** in the **Contract**.

25.3 The **Contractor** shall be entitled to a price adjustment for **Extra Work** performed pursuant to a written change order. Adjustments to price shall be computed in one or more of the following ways:

25.3.1 By applicable unit prices specified in the **Contract**; and/or

25.3.2 By agreement of a fixed price; and/or

25.3.3 By time and material records; and/or

25.3.4 In any other manner approved by the **CCPO.**

25.4 All payments for change orders are subject to pre-audit by the **Engineering Audit Officer** and may be post-audited by the **Comptroller** and/or the **Department**.

ARTICLE 26. METHODS OF PAYMENT FOR OVERRUNS AND EXTRA WORK

26.1 Overrun of Unit Price Item: An overrun is any quantity of a unit price item which the **Contractor** is directed to provide which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule.

26.1.1 For any unit price item, the **Contractor** will be paid at the unit price bid for any quantity up to one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule. If during the progress of the **Work**, the actual quantity of any unit price item required to complete the **Work** approaches the estimated quantity for that item, and for any reason it appears that the actual quantity of any unit price item necessary to complete the **Work** will exceed the estimated quantity for that item by twenty-five (25%) percent, the **Contractor** shall immediately notify the **Engineer** of such anticipated overrun. The **Contractor** shall not be compensated for any quantity of a unit price item provided which is in excess of one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule without written authorization from the Engineer.

26.1.2 If the actual quantity of any unit price item necessary to complete the Work will exceed one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule, the **City** reserves the right and the **Contractor** agrees to negotiate a new unit price for such item. In no event shall such negotiated new unit price exceed the unit bid price. If the **City** and **Contractor** cannot agree on a new unit price, then the **City** shall order the **Contractor** and the **Contractor** agrees to provide additional quantities of the item on a time and material basis for the actual and reasonable cost as determined under Article 26.2, but in no event at a unit price exceeding the unit price bid.

26.2 **Extra Work:** For **Extra Work** where payment is by agreement on a fixed price in accordance with Article 25.3.2, the price to be paid for such **Extra Work** shall be based on the fair and reasonable estimated cost of the items set forth below. For **Extra Work** where payment is on a time and material basis in accordance with Article 25.3.3, the price to be paid for such **Extra Work** shall be the actual and reasonable cost of the items set forth below.

26.2.1 Necessary materials (including transportation to the **Site**); plus

26.2.2 Necessary direct labor, including payroll taxes and supplemental benefits; plus

26.2.3 Sales and personal property taxes, if any, required to be paid on materials not incorporated into such **Extra Work**; plus

26.2.4 Reasonable rental value of **Contractor**-owned, necessary plant and equipment other than small tools, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per operating hour: (.035) x (HP rating) x (Fuel cost/gallon). Reasonable rental value is defined as the lower of either seventy-five percent of the monthly prorated rental rates established in "The AED Green Book, Rental Rates and Specifications for Construction Equipment" published by PRIMEDIA (the "Green Book"), or seventy-five percent of the monthly prorated rental rates established in the "Rental Rate Blue Book for Construction Equipment" published by PRIMEDIA (the "Blue Book"). The reasonable rental value is inclusive of all operating costs except for fuel/energy consumption and equipment operator's wages/costs. For multiple shift utilization, reimbursement shall be calculated as follows: first shift shall be seventy-five percent of such rental rates; second shift shall be sixty percent of the first shift rate; and third shift shall be forty

percent of the first shift rate. Equipment on standby shall be reimbursed at one-third the prorated monthly rental rate. **Contractor**-owned equipment includes equipment from rental companies affiliated with or controlled by the **Contractor,** as determined by the **Commissioner**. In establishing cost reimbursement for non-operating contractor-owned equipment (scaffolding, sheeting systems, road plates, etc.), the City may restrict reimbursement to a purchase-salvage/life cycle basis if less than the computed rental costs; plus

26.2.5 Necessary installation and dismantling of such plant and equipment, including transportation to and from the **Site**, if any, provided that, in the case of non-**Contractor**-owned equipment rented from a third party, the cost of installation and dismantling are not allowable if such costs are included in the rental rate; plus

26.2.6 Reasonable rental costs of non-**Contractor**-owned necessary plant and equipment other than small tools, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per hour of operation: (.035) x (HP rating) x (Fuel cost/gallon). In lieu of renting, the City reserves the right to direct the purchase of non-operating equipment (scaffolding, sheeting systems, road plates, etc.), with payment on a purchase-salvage/life cycle basis, if less than the projected rental costs; plus

26.2.7 Workers' compensation insurance, and any insurance coverage expressly required by the **City** for the performance of the **Extra Work** which is different than the types of insurance required by Article 22 and Schedule A of the General Conditions. The cost of workers' compensation insurance shall be based upon the Manual Rate for such insurance for the applicable work classifications/codes, in accordance with the most recent schedule promulgated by the New York Compensation Insurance Rating Board; plus

26.2.8 Additional costs incurred as a result of the **Extra Work** for performance and payment bonds; plus

26.2.9 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5 as compensation for overhead, except that no percentage for overhead will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes. Overhead shall include without limitation, all costs and expenses in connection with administration, management superintendence, small tools, and insurance required by Schedule A of the General Conditions other than workers' compensation insurance; plus

26.2.10 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5, plus item 26.2.9, as compensation for profit, except that no percentage for profit will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes; plus

26.2.11 Five (5%) percent of the total of items in Article 26.2.6, 26.2.7, and 26.2.8 as compensation for overhead and profit.

26.3 Where the **Extra Work** is performed in whole or in part by other than the **Contractor's** own forces pursuant to Article 26.2, the **Contractor** shall be paid, subject to pre-audit by the **Engineering Audit Officer**, the cost of such **Work** computed in accordance with Article 26.2 above, plus an additional allowance of five (5%) percent to cover the **Contractor's** overhead and profit.

26.4 Where a change is ordered, involving both **Extra Work** and omitted or reduced **Contract Work,** the **Contract** price shall be adjusted, subject to pre-audit by the **EAO**, in an amount based on the difference between the cost of such **Extra Work** and of the omitted or reduced **Work**. The cost of such **Extra Work** and of such omitted or reduced **Work** shall be computed based upon applicable **Contract** unit prices. Where there are no applicable **Contract** unit prices, the cost of such **Extra Work** and of such omitted or reduced **Contract Work** shall

be computed in accordance with items 26.2.1 through 26.2.8. If the cost of such **Extra Work** exceeds the costs of such omitted or reduced **Contract Work**, the **Contract** price shall be increased by the difference, plus percentages for overhead and profit as provided in Articles 26.2.9 through 26.2.11. If the cost of the omitted or reduced **Contract Work** exceeds the cost of the **Extra Work**, then the **Contract** price shall be reduced by the difference.

26.5 Where the **Contractor** and the **Commissioner** can agree upon a fixed price for **Extra Work** in accordance with Article 25.3.2 or another method of payment for **Extra Work** in accordance with Article 25.3.4, or for **Extra Work** ordered in connection with omitted work, such method, subject to pre-audit by the **EAO**, may, at the option of the **Commissioner**, be substituted for the cost plus a percentage method provided in Article 26.2; provided, however, that if the **Extra Work** is performed by a **Subcontractor**, the **Contractor** shall not be entitled to receive more than an additional allowance of five (5%) percent for overhead and profit over the cost of such **Subcontractor's Work** as computed in accordance with Article 26.2.

ARTICLE 27. RESOLUTION OF DISPUTES

27.1 All disputes between the **City** and the **Contractor** of the kind delineated in this article that arise under, or by virtue of, this **Contract** shall be finally resolved in accordance with the provisions of this article and the **PPB** Rules. This procedure for resolving all disputes of the kind delineated herein shall be the exclusive means of resolving any such disputes.

27.1.1 This article shall not apply to disputes concerning matters dealt with in other sections of the **PPB** Rules, or to disputes involving patents, copyrights, trademarks, or trade secrets (as interpreted by the courts of New York State) relating to proprietary rights in computer software.

27.1.2 This article shall apply only to disputes about the scope of work delineated by the **Contract**, the interpretation of **Contract** documents, the amount to be paid for **Extra Work** or disputed work performed in connection with the **Contract**, the conformity of the **Contractor's Work** to the **Contract**, and the acceptability and quality of the **Contractor's Work**; such disputes arise when the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** makes a determination with which the **Contractor** disagrees.

27.2 All determinations required by this article shall be made in writing clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination. Failure to make such determination within the time required by this article shall be deemed a non-determination without prejudice that will allow application to the next level.

27.3 During such time as any dispute is being presented, heard, and considered pursuant to this article, the **Contract** terms shall remain in force and the **Contractor** shall continue to perform **Work** as directed by the **ACCO** or the **Engineer**. Failure of the **Contractor** to continue **Work** as directed shall constitute a waiver by the **Contractor** of its claim.

27.4 Presentation of Disputes to **Commissioner**.

Notice of Dispute and Agency Response. The **Contractor** shall present its dispute in writing ("Notice of Dispute") to the **Commissioner** within thirty (30) Days of receiving written notice of the determination or action that is the subject of the dispute. This notice requirement shall not be read to replace any other notice requirements contained in the **Contract**. The Notice of Dispute shall include all the facts, evidence, documents, or other basis upon which the **Contractor** relies in support of its position, as well as a detailed computation demonstrating how any amount of money claimed by the **Contractor** in the dispute was arrived at. Within thirty (30) Days after receipt of the detailed written submission comprising the complete Notice of Dispute, the **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** shall submit to the **Commissioner** all materials he or she deems pertinent to the dispute. Following initial submissions to the **Commissioner**, either

party may demand of the other the production of any document or other material the demanding party believes may be relevant to the dispute. The requested party shall produce all relevant materials that are not otherwise protected by a legal privilege recognized by the courts of New York State. Any question of relevancy shall be determined by the **Commissioner** whose decision shall be final. Willful failure of the **Contractor** to produce any requested material whose relevancy the **Contractor** has not disputed, or whose relevancy has been affirmatively determined, shall constitute a waiver by the **Contractor** of its claim.

27.4.1 **Commissioner** Inquiry. The **Commissioner** shall examine the material and may, in his or her discretion, convene an informal conference with the **Contractor**, the **ACCO**, and the **Engineer**, **Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** to resolve the issue by mutual consent prior to reaching a determination. The **Commissioner** may seek such technical or other expertise as he or she shall deem appropriate, including the use of neutral mediators, and require any such additional material from either or both parties as he or she deems fit. The **Commissioner's** ability to render, and the effect of, a decision hereunder shall not be impaired by any negotiations in connection with the disputed presented, whether or not the **Commissioner** participated therein. The **Commissioner** may or, at the request of any party to the dispute, shall compel the participation of any other **Contractor** with a **Contract** related to the **Work** of this **Contract**, and that **Contractor** shall be bound by the decision of the **Commissioner**. Any **Contractor** thus brought into the dispute resolution proceeding shall have the same rights and obligations under this article as the **Contractor** initiating the dispute.

27.4.2 **Commissioner** Determination. Within thirty (30) days after the receipt of all materials and information, or such longer time as may be agreed to by the parties, the **Commissioner** shall make his or her determination and shall deliver or send a copy of such determination to the **Contractor**, the **ACCO**, and **Engineer**, **Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner**, as applicable, together with a statement concerning how the decision may be appealed.

27.4.3 Finality of **Commissioner** Decision. The **Commissioner's** decision shall be final and binding on all parties, unless presented to the Contract Dispute Resolution Board pursuant to this article. The **City** may not take a petition to the Contract Dispute Resolution Board. However, should the **Contractor** take such a petition, the **City** may seek, and the Contract Dispute Resolution Board may render, a determination less favorable to the **Contractor** and more favorable to the **City** than the decision of the **Commissioner**.

27.5 Presentation of Dispute to the **Comptroller**. Before any dispute may be brought by the **Contractor** to the Contract Dispute Resolution Board, the **Contractor** must first present its claim to the **Comptroller** for his or her review, investigation, and possible adjustment.

27.5.1 Time, Form, and Content of Notice. Within thirty (30) days of its receipt of a decision by the **Commissioner,** the **Contractor** shall submit to the **Comptroller** and to the **Commissioner** a Notice of Claim regarding its dispute with the **Agency**. The Notice of Claim shall consist of (i) a brief Written statement of the substance of the dispute, the amount of money, if any, claimed and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written decision of the **Commissioner**; and (iii) a copy of all materials submitted by the **Contractor** to the **Agency**, including the Notice of Dispute. The **Contractor** may not present to the **Comptroller** any material not presented to the **Commissioner**, except at the request of the **Comptroller**.

27.5.2 **Agency** Response. Within thirty (30) days of receipt of the Notice of Claim, the **Agency** shall make available to the **Comptroller** a copy of all material submitted by the **Agency** to the **Commissioner** in connection with the dispute. The **Agency** may not present to the **Comptroller** any material not presented to the **Commissioner** except at the request of the **Comptroller**.

27.5.3 **Comptroller** Investigation. The **Comptroller** may investigate the claim in dispute and, in the course of such investigation, may exercise all powers provided in section 7-201 and 7-203 of the New York City Administrative Code. In addition, the **Comptroller** may demand of either party, and such party shall provide, whatever additional material the **Comptroller** deems pertinent to the claim, including original business records of the **Contractor**. Willful failure of the **Contractor** to produce within fifteen (15) days any material requested by the **Comptroller** shall constitute a waiver by the **Contractor** of its claim. The **Comptroller** may also schedule an informal conference to be attended by the **Contractor**, **Agency** representatives, and any other personnel desired by the **Comptroller**.

27.5.4 Opportunity of **Comptroller** to Compromise or Adjust Claim. The **Comptroller** shall have forty-five (45) days from his or her receipt of all materials referred to in Article 27.5.3 to investigate the disputed claim. The period for investigation and compromise may be further extended by agreement between the **Contractor** and the **Comptroller**, to a maximum of ninety (90) days from the **Comptroller's** receipt of all materials. The **Contractor** may not present its petition to the Contract Dispute Resolution Board until the period for investigation and compromise delineated in Article 27.5.4 has expired. In compromising or adjusting any claim hereunder, the **Comptroller** may not revise or disregard the terms of the **Contract** between the parties.

27.6 Contract Dispute Resolution Board. There shall be a Contract Dispute Resolution Board composed of:

27.6.1 The chief administrative law judge of the Office of Administrative Trials and Hearings (OATH) or his/her designated OATH administrative law judge, who shall act as chairperson, and may adopt operational procedures and issue such orders consistent with this article as may be necessary in the execution of the Contract Dispute Resolution Board's functions, including, but not limited to, granting extensions of time to present or respond to submissions;

27.6.1.1The **CCPO** or his/her designee; any designee shall have the requisite background to consider and resolve the merits of the dispute and shall not have participated personally and substantially in the particular matter that is the subject of the dispute or report to anyone who so participated; and

27.6.2 A person with appropriate expertise who is not an employee of the City. This person shall be selected by the presiding administrative law judge from a prequalified panel of individuals, established and administered by OATH with appropriate background to act as decision-makers in a dispute. Such individual may not have a contract or dispute with the City or be an officer or employee of any company or organization that does, or regularly represents persons, companies, or organizations having disputes with the City.

27.7 Petition to the Contract Dispute Resolution Board. In the event the claim has not been settled or adjusted by the **Comptroller** within the period provided in this article, the **Contractor**, within thirty (30) days thereafter, may petition the Contract Dispute Resolution Board to review the **Commissioner's** determination.

27.7.1 Form and Content of Petition by **Contractor**. The **Contractor** shall present its dispute to the Contract Dispute Resolution Board in the form of a petition, which shall include (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed, and the reason(s) the Contractor contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written Decision of the **Commissioner**, (iii) copies of all materials submitted by the **Contractor** to the Agency; (iv) a copy of the written decision of the **Comptroller**, if any, and (v) copies of all correspondence with, or written material submitted by the **Contractor**, to the **Comptroller**. The **Contractor** shall concurrently submit four (4) complete sets of the Petition: one set to the Corporation Counsel (Attn: Commercial and Real Estate Litigation Division) and three (3) sets to the Contract

Dispute Resolution Board at OATH's offices with proof of service on the Corporation Counsel. In addition, the **Contractor** shall submit a copy of the written statement of the substance of the dispute, cited in (i) above, to both the **Commissioner** and the **Comptroller**.

27.7.2 **Agency** Response. Within thirty (30) Days of its receipt of the petition by the Corporation Counsel, the **Agency** shall respond to the brief written statement of the **Contractor** and make available to the Contract Dispute Resolution Board all material it submitted to the **Commissioner** and **Comptroller**. Three (3) complete copies of the **Agency** response shall be provided to the Contract Dispute Resolution Board and one to the **Contractor**. Extensions of time for submittal of the **Agency** response shall be given as necessary upon a showing of good cause or, upon consent of the parties, for an initial period of up to thirty (30) Days.

27.7.3 Further Proceedings. The Contract Dispute Resolution Board shall permit the **Contractor** to present its case by submission of memoranda, briefs, and oral argument. The Contract Dispute Resolution Board shall also permit the **Agency** to present its case in response to the **Contractor** by submission of memoranda, briefs, and oral argument. If requested by the Corporation Counsel, the **Comptroller** shall provide reasonable assistance in the preparation of the **Agency's** case. Neither the **Contractor** nor the **Agency** may support its case with any documentation or other material that was not considered by the **Comptroller**, unless requested by the Contract Dispute Resolution Board. The Contract Dispute Resolution Board, in its discretion, may seek such technical or other expert advice as it shall deem appropriate and may seek, on its own or upon application of a party, any such additional material from any party as it deems fit. The Contract Dispute Resolution Board, in its discretion, may combine more than one dispute between the parties for concurrent resolution.

27.7.4 Contract Dispute Resolution Board Determination. Within forty-five (45) Days of the conclusion of all written submissions and oral arguments, the Contract Dispute Resolution Board shall render a written decision resolving the dispute. In an unusually complex case, the Contract Dispute Resolution Board may render its decision in a longer period, not to exceed ninety (90) Days, and shall so advise the parties at the commencement of this period. The Contract Dispute Resolution Board's decision must be consistent with the terms of the **Contract**. Decisions of the Contract Dispute Resolution Board shall only resolve matters before the Contract Dispute Resolution Board and shall not have precedential effect with respect to matters not before the Contract Dispute Resolution Board.

27.7.5 Notification of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board shall send a copy of its decision to the **Contractor**, the **ACCO**, the Engineer, the **Comptroller**, the Corporation Counsel, the Director of the Office of Construction, and the **PPB**. A decision in favor of the **Contractor** shall be subject to the prompt payment provisions of the **PPB** Rules. The Required Payment Date shall be thirty (30) Days after the date the parties are formally notified of the Contract Dispute Resolution Board's decision.

27.7.6 Finality of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board's decision shall be final and binding on all parties. Any party may seek review of the Contract Dispute Resolution Board's decision solely in the form of a challenge, filed within four (4) months of the date of the Contract Dispute Resolution Board's decision, in a court of competent jurisdiction of the State of New York, County of New York pursuant to Article 78 of the Civil Practice Laws and Rules. Such review by the court shall be limited to the question of whether or not the Contract Dispute Resolution Board's decision was made in violation of lawful procedure, was affected by an error of **Law**, or was arbitrary and capricious or an abuse of discretion. No evidence or information shall be introduced or relied upon in such proceeding that was not presented to the Contract Dispute Resolution Board in accordance with this article.

27.8 Any termination, cancellation, or alleged breach of the **Contract** prior to or during the pendency of any proceedings pursuant to this article shall not affect or impair the ability of the **Commissioner** or Contract Dispute Resolution Board to make a binding and final decision pursuant to this article.

ARTICLE 28. RECORD KEEPING FOR EXTRA OR DISPUTED WORK

28.1 While the **Contractor** or any of its **Subcontractors** is performing **Extra Work** on a Time and Material Basis ordered by the **Commissioner** under Article 25, or is performing disputed **Work**, or complying with a determination or order under protest in accordance with Articles 27 and 30, in each such case the **Contractor** shall furnish the **Resident Engineer** daily with three (3) copies of written statements signed by the **Contractor's** representative at the **Site** showing:

28.1.1 The name and number of each Worker employed on such **Work** or engaged in complying with such determination or order, the number of hours employed, and the character of the **Work** each is doing; and

28.1.2 The nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such **Work** or compliance with such determination or order, and from whom purchased or rented.

28.2 A copy of such statement will be countersigned by the **Resident Engineer**, noting thereon any items not agreed to or questioned, and will be returned to the **Contractor** within two (2) **Days** after submission.

28.3 The **Contractor** and its **Subcontractors**, when required by the **Commissioner**, or the **Comptroller**, shall also produce for inspection, at the office of the **Contractor** or **Subcontractor**, any and all of its books, bid documents, financial statements, vouchers, records, daily job diaries and reports, and cancelled checks, and any other documents relating to showing the nature and quantity of the labor, materials, plant and equipment actually used in the performance of such **Work**, or in complying with such determination or order, and the amounts expended therefor, and shall permit the **Commissioner** and the **Comptroller** to make such extracts therefrom, or copies thereof, as they or either of them may desire.

28.4 In connection with the examination provided for herein, the **Commissioner**, upon demand therefor, will produce for inspection by the **Contractor** such records as the **Agency** may have with respect to such **Extra** or disputed **Work** performed under protest pursuant to order of the **Commissioner**, except those records and reports which may have been prepared for the purpose of determining the accuracy and validity of the **Contractor's** claim.

28.5 Failure to comply strictly with these requirements shall constitute a waiver of any claim for extra compensation or damages on account of the performance of such **Work** or compliance with such determination or order.

ARTICLE 29. OMITTED WORK

29.1 If any **Contract Work** in a lump sum **Contract**, or if any part of a lump sum item in a unit price, lump sum, or percentage-bid **Contract** is omitted by the **Commissioner** pursuant to Article 33, the **Contract** price, subject to audit by the EAO, shall be reduced by a pro rata portion of the lump sum bid amount based upon the percent of **Work** omitted subject to Article 29.4. For the purpose of determining the pro rata portion of the lump sum bid amount, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be the determining factor.

29.2 If the whole of a lump sum item or units of any other item is so omitted by the **Commissioner** in a unit price, lump sum, or percentage-bid **Contract**, then no payment will be made therefor except as provided in Article 29.4.

29.3 For units that have been ordered but are only partially completed, the unit price shall be reduced by a pro rata portion of the unit price bid based upon the percentage of **Work** omitted subject to Article 29.4.

29.4 In the event the **Contractor**, with respect to any omitted **Work**, has purchased any non-cancelable material and/or equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated into the **Work**, the **Contractor** shall be paid for such material and/or equipment in accordance with Article 64.2.1(b); provided, however, such payment is contingent upon the **Contractor's** delivery of such material and/or equipment in acceptable condition to a location designated by the **City**.

29.5 The **Contractor** agrees to make no claim for damages or for loss of overhead and profit with regard to any omitted **Work**.

ARTICLE 30. NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS

30.1 If the **Contractor** shall claim to be sustaining damages by reason of any act or omission of the **City** or its agents, it shall submit to the **Commissioner** within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter for as long as such damages are incurred, verified statements of the details and the amounts of such damages, together with documentary evidence of such damages. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. Failure of the **Commissioner** to respond in writing to a written request for additional time within thirty (30) **Days** shall be deemed a denial of the request. On failure of the **Contractor** to fully comply with the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action or dispute resolution procedure arising under or by reason of this **Contract** shall not be different from or in excess of the statements and documentation made pursuant to this article.

30.2 In addition to the foregoing statements, the **Contractor** shall, upon notice from the **Commissioner**, produce for examination at the **Contractor's** office, by the **Engineer**, **Architect** or **Project Manager**, all of its books of account, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**, and submit itself and persons in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.3 In addition to the statements required under Article 28 and this Article, the **Contractor** and/or its **Subcontractor** shall, within thirty (30) **Days** upon notice from the **Commissioner** or **Comptroller**, produce for examination at the **Contractor's** and/or **Subcontractor's** office, by a representative of either the **Commissioner** or **Comptroller**, all of its books of account, bid documents, financial statements, accountant workpapers, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**. Further, the **Contractor** and/or its **Subcontractor** shall submit any person in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.4 Unless the information and examination required under Article 30.3 is provided by the **Contractor** and/or its **Subcontractor** upon thirty (30) **Days** notice from the **Commissioner** or **Comptroller**, or upon the **Commissioner's** or **Comptroller's** written authorization to extend the time to comply, the **City** shall be released

from all claims arising under, relating to or by reason of this **Contract**, except for sums certified by the **Commissioner** or **Comptroller** to be due under the provisions of this **Contract**. It is further stipulated and agreed that no person has the power to waive any of the foregoing provisions and that in any action or dispute resolution procedure against the **City** to recover any sum in excess of the sums certified by the **Commissioner** or **Comptroller** to be due under or by reason of this **Contract**, the **Contractor** must allege in its complaint and prove, at trial or during such dispute resolution procedure, compliance with the provisions of this Article.

30.5 In addition, after the commencement of any action or dispute resolution procedure by the **Contractor** arising under or by reason of this **Contract**, the **City** shall have the right to require the **Contractor** to produce for examination under oath, up until the trial of the action or hearing before the Contract Dispute Resolution Board, the books and documents described in Article 30.3 and submit itself and all persons in its employ for examination under oath. If this Article is not complied with as required, then the **Contractor** hereby consents to the dismissal of the action or dispute resolution procedure.

CHAPTER VII
POWERS OF THE RESIDENT ENGINEER, THE ENGINEER OR ARCHITECT AND THE COMMISSIONER

ARTICLE 31. THE RESIDENT ENGINEER

31.1 The **Resident Engineer** shall have the power to inspect, supervise and control the performance of the **Work**, subject to review by the **Commissioner**. The **Resident Engineer** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 32. THE ENGINEER OR ARCHITECT OR PROJECT MANAGER

32.1 The **Engineer** or **Architect** or **Project Manager**, in addition to those matters elsewhere herein delegated to the **Engineer** and expressly made subject to his/her determination, direction or approval, shall have the power, subject to review by the **Commissioner**:

32.1.1 To determine the amount, quality, and location of the **Work** to be paid for hereunder; and

32.1.2 To determine all questions in relation to the **Work**, to interpret the **Contract Drawings, Specifications**, and **Addenda**, and to resolve all patent inconsistencies or ambiguities therein; and

32.1.3 To determine how the **Work** of this **Contract** shall be coordinated with **Work** of other **Contractors** engaged simultaneously on this **Project**, including the power to suspend any part of the **Work**, but not the whole thereof; and

32.1.4 To make minor changes in the **Work** as he/she deems necessary, provided such changes do not result in a net change in the cost to the **City** or to the **Contractor** of the **Work** to be done under the **Contract**; and

32.1.5 To amplify the **Contract Drawings**, add explanatory information and furnish additional **Specifications** and drawings, consistent with this **Contract**.

32.2 The foregoing enumeration shall not imply any limitation upon the power of the **Engineer** or **Architect** or **Project Manager**, for it is the intent of this **Contract** that all of the **Work** shall generally be subject to his/her determination, direction and approval, except where the determination, direction or approval of someone other than the **Engineer** or **Architect** or **Project Manager** is expressly called for herein.

32.3 The **Engineer** or **Architect** or **Project Manager** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 33. THE COMMISSIONER

33.1 The **Commissioner**, in addition to those matters elsewhere herein expressly made subject to his/her determination, direction or approval, shall have the power:

33.1.1 To review and make determinations on any and all questions in relation to this **Contract** and its performance; and

33.1.2 To modify or change this **Contract** so as to require the performance of **Extra Work** (subject, however, to the limitations specified in Article 25) or the omission of **Contract Work**; and

33.1.3 To suspend the whole or any part of the **Work** whenever in his/her judgment such suspension is required:

33.1.3(a) In the interest of the **City** generally; or

33.1.3(b) To coordinate the **Work** of the various **Contractors** engaged on this **Project** to the provisions of Article 12; or

33.1.3(c) To expedite the completion of the entire **Project** even though the completion of this particular **Contract** may thereby be delayed.

ARTICLE 34. NO ESTOPPEL

34.1 Neither the **City** nor any **Agency**, officer, agent or employee thereof, shall be bound, precluded or estopped by any determination, decision, approval, order, letter, payment or certificate made or given under or in connection with this **Contract** by the **City**, the **Commissioner**, the **Resident Engineer**, or any other officer, agent or employee of the **City**, either before or after the final completion and acceptance of the **Work** and payment therefor:

34.1.1 From showing the true and correct classification, amount, quality or character of the **Work** actually done; or that any such determination, decision, order, letter, payment or certificate was untrue, incorrect or improperly made in any particular, or that the **Work**, or any part thereof, does not in fact conform to the requirements of this **Contract**; and

34.1.2 From demanding and recovering from the **Contractor** any overpayment made to it, or such damages as the **City** may sustain by reason of the **Contractor's** failure to perform each and every part of its **Contract**.

CHAPTER VIII
LABOR PROVISIONS

ARTICLE 35. EMPLOYEES

35.1 The **Contractor** and its **Subcontractors** shall not employ on the **Work**:

35.1.1 Anyone who is not competent, faithful and skilled in the **Work** for which he/she shall be employed; and whenever the **Commissioner** shall inform the **Contractor**, in writing, that any employee is, in his/her opinion, incompetent, unfaithful or disobedient, that

employee shall be discharged from the **Work** forthwith, and shall not again be employed upon it; or

35.1.2 Any labor, materials or means whose employment, or utilization during the course of this **Contract**, may tend to or in any way cause or result in strikes, work stoppages, delays, suspension of **Work** or similar troubles by workers employed by the **Contractor** or its **Subcontractors**, or by any of the trades working in or about the buildings and premises where **Work** is being performed under this **Contract**, or by **Other Contractors** or their **Subcontractors** pursuant to other Contracts, or on any other building or premises owned or operated by the **City**, its **Agencies**, departments, boards or authorities. Any violation by the **Contractor** of this requirement may, upon certification of the **Commissioner**, be considered as proper and sufficient cause for declaring the **Contractor** to be in default, and for the **City** to take action against it as set forth in Chapter X of this **Contract**, or such other article of this **Contract** as the **Commissioner** may deem proper; or

35.1.3 In accordance with Section 220.3-e of the Labor Law of the State of New York (hereinafter "Labor **Law**"), the **Contractor** and its **Subcontractors** shall not employ on the **Work** any apprentice, unless he/she is a registered individual, under a bona fide program registered with the New York State Department of Labor. The allowable ratio of apprentices to journey-level workers in any craft classification shall not be greater than the ratio permitted to the **Contractor** as to its **Work** force on any job under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the wage rate determined by the **Comptroller** of the **City** for the classification of **Work** actually performed. The **Contractor** or **Subcontractor** will be required to furnish written evidence of the registration of its program and apprentices as well as all the appropriate ratios and wage rates, for the area of the construction prior to using any apprentices on the **Contract Work.**

35.2 If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand dollars, all laborers, workers, and mechanics employed in the performance of the **Contract** on the public work site, either by the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States department of labor's occupational safety and health administration that is at least ten hours in duration.

ARTICLE 36. NO DISCRIMINATION

36.1 The **Contractor** specifically agrees, as required by Labor Law Section 220-e, as amended, that:

36.1.1 In the hiring of employees for the performance of **Work** under this **Contract** or any subcontract hereunder, neither the **Contractor**, **Subcontractor**, nor any person acting on behalf of such **Contractor** or **Subcontractor**, shall by reason of race, creed, color or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the **Work** to which the employment relates;

36.1.2 Neither the **Contractor**, **Subcontractor**, nor any person on its behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this **Contract** on account of race, creed, color or national origin;

36.1.3 There may be deducted from the amount payable to the **Contractor** by the **City** under this **Contract** a penalty of fifty ($50.00) dollars for each person for each **Day** during which such person was discriminated against or intimidated in violation of the provisions of this **Contract**; and

36.1.4 This **Contract** may be cancelled or terminated by the **City** and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this article.

36.1.5 The aforesaid provisions of this article covering every **Contract** for or on behalf of the State or a municipality for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

36.2 The Contractor specifically agrees, as required by Section 6-108 of the Administrative Code, as amended, that:

36.2.1 It shall be unlawful for any person engaged in the construction, alteration or repair of buildings or engaged in the construction or repair of streets or highways pursuant to a **Contract** with the **City** or engaged in the manufacture, sale or distribution of materials, equipment or supplies pursuant to a **Contract** with the **City** to refuse to employ or to refuse to continue in any employment any person on account of the race, color or creed of such person.

36.2.2 It shall be unlawful for any person or any servant, agent or employee of any person, described in Article 36.1.2, to ask, indicate or transmit, orally or in writing, directly or indirectly, the race, color or creed or religious affiliation of any person employed or seeking employment from such person, firm or corporation.

36.2.3 Breach of the foregoing provisions shall be deemed a violation of a material provision of this **Contract.**

36.2.4 Any person, or the employee, manager or owner of or officer of such firm or corporation who shall violate any of the provisions of this section shall, upon conviction thereof, be punished by a fine of not more than one hundred ($100.00) dollars or by imprisonment for not more than thirty (30) **Days**, or both.

36.3 This **Contract** is subject to the requirements of Executive Order No. 50 (1980) ("E.O. 50"), as revised, and the Rules and Regulations promulgated thereunder. No **Contract** will be awarded unless and until these requirements have been complied with in their entirety. By signing this **Contract**, the **Contractor** agrees that it:

36.3.1 Will not engage in any unlawful discrimination against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, marital status or sexual orientation with respect to all employment decisions including, but not limited to, recruitment, hiring, upgrading, demotion, downgrading, transfer, training, rates of pay or other forms of compensation, layoff, termination, and all other terms and conditions of employment; and

36.3.2 Will not engage in any unlawful discrimination in the selection of **Subcontractors** on the basis of the owner's race, color, creed, national origin, sex, age, disability, marital status or sexual orientation; and

36.3.3 Will state in all solicitations or advertisements for employees placed by or on behalf of the **Contractor** that all qualified applicants will receive consideration for employment without unlawful discrimination based on race, creed, color, national origin, sex, age, citizens status, disability, marital status, sexual orientation, or that it is an equal employment opportunity employer; and

36.3.4 Will send to each labor organization or representative of workers with which it has a Collective Bargaining Agreement or other Contract or memorandum of understanding, written

notification of its equal employment opportunity commitments under E.O. 50 and the Rules and Regulations promulgated thereunder; and

36.3.5 Will furnish all information and reports including an Employment Report before the award of the **Contract** which are required by E.O. 50, the Rules and Regulations promulgated thereunder, and orders of the Department of Business Services, Division of Labor Services (**"DLS"**) and will permit access to its books, records and accounts by the **DLS** for the purposes of investigation to ascertain compliance with such rules, regulations, and orders.

36.4 The **Contractor** understands that in the event of its noncompliance with the nondiscrimination clauses of this **Contract** or with any of such rules, regulations, or orders, such noncompliance shall constitute a material breach of this **Contract** and noncompliance with E.O. 50 and the Rules and Regulations promulgated thereunder. After a hearing held pursuant to the rules of the **DLS**, the Director of the **DLS** may direct the **Commissioner** to impose any or all of the following sanctions:

36.4.1 Disapproval of the **Contractor**; and/or

36.4.2 Suspension or termination of the **Contract**; and/or

36.4.3 Declaring the **Contractor** in default; and/or

36.4.4 In lieu of any of the foregoing sanctions, the Director of the **DLS** may impose an employment program.

Failure to comply with E.O. 50 and the rules and regulations promulgated thereunder, in one or more instances, may result in the **Agency** declaring the **Contractor** to be non-responsible.

The **Contractor** further agrees that it will refrain from entering into any **Contract** or **Contract** modification subject to E.O. 50 and the rules and regulations promulgated thereunder with a **Subcontractor** who is not in compliance with the requirements of E.O. 50 and the rules and regulations promulgated thereunder.

36.5 The **Contractor** specifically agrees, as required by Section 6-123 of the Administrative Code, that:

36.5.1 The **Contractor** will not engage in any unlawful discriminatory practice in violation of Title VIII of the Administrative Code;

36.5.2 every agreement between the **Contractor** and its **Subcontractors** in excess of $50,000 shall include a provision that the **Subcontractor** shall not engage in any unlawful discriminatory practice as defined in title viii of the Administrative Code (Section 8-101 et. seq.); and

36.5.3 Any failure to comply with this Article 36.5 may subject the **Contractor** to the remedies set forth in Section 6-123 of the Administrative Code, including, where appropriate, sanctions such as withholding of payment, imposition of an employment program, finding the **Contractor** to be in default, cancellation of the **Contract**, or any other sanction or remedy provided by **Law** or **Contract**.

ARTICLE 37. LABOR LAW REQUIREMENTS

37.1 The **Contractor** shall strictly comply with all applicable provisions of the Labor Law, as amended. Such compliance is a material term of this **Contract**.

37.2 The **Contractor** specifically agrees, as required by Labor Law Section 220 and 220-d, as amended, that:

37.2.1 Hours of **Work**: No laborer, worker, or mechanic in the employ of the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by this **Contract** shall be permitted or required to work more than eight (8) hours in any one (1) calendar **Day**, or more than five (5) **Days** in any one (1) week, except as provided in the Labor Law and in cases of extraordinary emergency including fire, flood, or danger to life or property, or in the case of national emergency when so proclaimed by the President of the United States of America.

37.2.2 In situations in which there are not sufficient laborers, workers and mechanics who may be employed to carry on expeditiously the **Work** contemplated by this **Contract** as a result of such restrictions upon the number of hours and days of labor, and the immediate commencement or prosecution or completion without undue delay of the **Work** is necessary for the preservation of the **Site** and/or for the protection of the life and limb of the persons using the same, such laborers, workers, and mechanics shall be permitted or required to work more than eight (8) hours in any one (1) **Day**; or five (5) **Days** in any one (1) week; provided, however, that upon application of any **Contractor**, the **Commissioner** shall have first certified to the Commissioner of Labor of the State of New York (hereinafter "Commissioner of Labor") that such public **Work** is of an important nature and that a delay in carrying it to completion would result in serious disadvantage to the public; and provided, further, that such Commissioner of Labor shall have determined that such an emergency does in fact exist as provided in Labor Law Section 220.2.

37.2.3 Failure of the **Commissioner** to make such a certification to the Commissioner of Labor shall not entitle the **Contractor** to damages for delay or for any cause whatsoever.

37.2.4 Prevailing Rate of Wages: The wages to be paid for a legal day's **Work** to laborers, workers, or mechanics employed upon the **Work** contemplated by this **Contract** or upon any materials to be used thereon shall not be less than the "prevailing rate of wage" as defined in Labor **Law** Section 220, and as fixed by the **Comptroller** in the attached Schedule of Wage Rates and in updated schedules thereof. The prevailing wage rates and supplemental benefits to be paid are those in effect at the time the **Work** is being performed.

37.2.5 Requests for interpretation or correction in the Information for Bidders includes all requests for clarification of the classification of trades to be employed in the performance of the **Work** under this **Contract**. In the event that a trade not listed in the **Contract** is in fact employed during the performance of this **Contract**, the **Contractor** shall be required to obtain from the **Agency** the prevailing wage rates and supplementary benefits for the trades used and to complete the performance of this **Contract** at the price at which the **Contract** was awarded.

37.2.6 Minimum Wages: Except for employees whose wage is required to be fixed pursuant to Labor Law Section 220, all persons employed by the **Contractor** and any **Subcontractor** in the manufacture or furnishing of the supplies, materials, or equipment, or the furnishing of work, labor, or services, used in the performance of this **Contract**, shall be paid, without subsequent deduction or rebate unless expressly authorized by **Law**, not less than the sum mandated by **Law**. Minimum wages shall be the rates fixed by Federal **Law** and regulations.

37.3 Working Conditions: No part of the **Work**, labor or services shall be performed or rendered by the **Contractor** in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of this **Contract**. Compliance with the safety, sanitary and factory inspection **Laws** of the state in which the **Work** is to be performed shall be prima facie evidence of compliance with this article.

37.4 Prevailing Wage Enforcement: The **Contractor** agrees to pay for all costs incurred by the **City** in enforcing prevailing wage requirements, including the cost of any investigation conducted by or on behalf of the **Agency** or the **Comptroller,** where the **City** discovers a failure to comply with any of the requirements of this Article 37 by the **Contractor** or its **Subcontractor(s).** The **Contractor** also agrees, that should it fail or refuse to pay for any such investigation, the **Agency** is hereby authorized to deduct from a **Contractor's** account an amount equal to the cost of such investigation.

37.4.1 The Labor Law Section 220 and Section 220-d, as amended, provide that this **Contract** shall be forfeited and no sum paid for any Work done hereunder on a second conviction for willfully paying less than:

37.4.1(a) The stipulated wage scale as provided in Labor Law Section 220, as amended, or

37.4.1(b) Less than the stipulated minimum hourly wage scale as provided in Labor Law Section 220-d, as amended.

37.4.2 For any breach or violation of either Working Conditions (Article 37.3) and Minimum Wages (Article 37.2.6), the party responsible therefore shall be liable to the **City** for liquidated damages, which may be withheld from any amounts due on any **Contracts** with the **City** of such party responsible, or may be recovered in suits brought by the Corporation Counsel in the name of the **City**, in addition to damage for any other breach of this **Contract**, a sum equal to the amount of any underpayment of wages due to any employee engaged in the performance of this **Contract.** In addition, the **Commissioner** shall have the right to cancel **Contracts** and enter into other **Contracts** for the completion of the original **Contract**, with or without public letting, and the original **Contractor** shall be liable for any additional cost. All sums withheld or recovered as deductions, rebates, refunds, or underpayment of wages hereunder, shall be held in a special deposit account and shall be paid without interest, on order of the **Comptroller**, directly to the employees who have been paid less than minimum rates of pay as set forth herein and on whose account such sums were withheld or recovered, provided that no claims by employees for such payments shall be entertained unless made within two (2) years from the date of actual notice to the **Contractor** of the withholding or recovery of such sums by the **City**.

37.4.3 A determination by the **Comptroller** that a **Contractor** and/or its **Subcontractor** willfully violated Labor Law Section 220 will be forwarded to the **City's** five District Attorneys for review.

37.4.4 The **Contractor's** or **Subcontractor's** noncompliance with this article and Labor **Law** Section 220, may result in an unsatisfactory performance evaluation and the **Comptroller** may also find and determine that the **Contractor** or **Subcontractor** willfully violated the New York Labor **Law.**

37.4.4(a) An unsatisfactory performance evaluation for noncompliance with this article may result in a determination that the **Contractor** is a non-responsible bidder on subsequent procurements with the **City** and thus a rejection of a future award of a contract with the **City**, as well as any other sanctions provided for by **Law.**

37.4.4(b) Labor **Law** Section 220-b, as amended, provides that when two (2) final determinations have been rendered against a **Contractor** or **Subcontractor** within any consecutive six (6) year period determining that such **Contractor** or **Subcontractor** has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with the Labor **Law** and this article, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public work projects are rendered

simultaneously, such **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public work contract with the **City** for a period of five (5) years from the second final determination. If the final determination involves the falsification of payroll records or the kickback of wages or supplements, the **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public work contract with the **City** for a period of five (5) years from the first final determination.

37.4.4(c) Labor **Law** Section 220, as amended, provides that the **Contractor** or **Subcontractor** found to have violated this article may be directed to make payment of wages or supplements including interest found to be due, and the **Contractor** or **Subcontractor** may be directed to make payment of a further sum as a civil penalty in an amount not exceeding twenty-five (25%) percent of the total amount found to be due.

37.5 The **Contractor** and its **Subcontractors** shall within ten (10) **Days** after mailing of a Notice of Award or written order, post in prominent and conspicuous places in each and every plant, factory, building, and structure where employees of the **Contractor** and its **Subcontractors** engaged in the performance of this **Contract** are employed, notices furnished by the **City**, in relation to prevailing wages and supplements, minimum wages and other stipulations contained in Sections 220 and 220-h of the Labor **Law**, and the **Contractor** and its **Subcontractors** shall continue to keep such notices posted in such prominent and conspicuous places until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services required to be furnished or rendered under this **Contract.**

37.6 The **Contractor** shall strictly comply with all of the provisions of Articles 37.6.1 through 37.6.5, and provide for all workers, laborers or mechanics in its employ, the following:

37.6.1 Notices Posted At **Site**: Post, in a location designated by the **City**, schedules of prevailing wages and supplements for this **Project**, a copy of all re-determinations of such schedules for the **Project**, the Workers' Compensation **Law** Section 51 notice, all other notices required by law to be posted at the **Site**, the **City** notice that this **Project** is a public works **Project** on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the **City** directs the **Contractor** to post. The **Contractor** shall provide a surface for such notices which is satisfactory to the **City**. The **Contractor** shall maintain and keep current such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The **Contractor** shall post such notices before commencing any **Work** on the **Site** and shall maintain such notices until all **Work** on the **Site** is complete; and

37.6.2 Daily **Site** Sign-in Sheets: Maintain daily **Site** sign-in sheets, and require that **Subcontractors** maintain daily **Site** sign-in sheets for its employees, which include blank spaces for an employee's name to be both printed and signed, job title, date started and Social Security number, the time the employee began **Work** and the time the employee left **Work**, until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services to be furnished or rendered under this **Contract** unless exception is granted by the Comptroller upon application by the **Agency.** In the alternative, subject to the approval of the CCPO, the **Contractor** and **Subcontractor** may maintain an electronic or biometric sign-in system, which provides the information required by this Article 37.6.2; and

37.6.3 Individual Employee Information Notices: Distribute a notice, to each worker, laborer or mechanic employed under this **Contract**, in a form provided by the **Agency**, that this **Project** is a public work project on which each worker, laborer or mechanic is entitled to receive the prevailing rate of wages and supplements for the occupation at which he or she is working. If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand dollars, such notice shall also include a statement that, that each worker, laborer or mechanic be certified prior to performing any

Work as having successfully completed a course in construction safety and health approved by the United States department of labor's occupational safety and health administration that is at least ten hours in duration. Such notice shall be distributed to each worker before he or she starts performing any **Work** of this **Contract** and with the first paycheck after July first of each year. Worker, laborer or mechanic includes employees of the **Contractor** and all **Subcontractors** and all employees of suppliers entering the **Site**. At the time of distribution, the **Contractor** shall have each worker, laborer or mechanic sign a statement, in a form provided by the **Agency**, certifying that the worker has received the notice required by this article, which signed statement shall be maintained with the payroll records required by this **Contract**; and

37.6.3.1 The Contractor and each Subcontractor shall notify each worker, laborer or mechanic employed under this **Contract** in writing of the prevailing rate of wages for their particular job classification. Such notification shall be given to every worker, laborer and mechanic on their first pay stub and with every pay stub thereafter; and

37.6.4 **Site** Laminated Identification Badges: Provide laminated identification badges which indicate the worker's, laborer's or mechanic's name, trade, employer's name and employment starting date (month/day/year). Further, require as a condition of employment on the **Site**, that each and every worker, laborer or mechanic wear the laminated identification badge at all times and that it may be seen by any representative of the **City**; and

37.6.5 Language Other Than English Used On **Site**: Provide the **ACCO** notice when three (3) or more employees (worker and/or laborer and/or mechanic) on the **Site**, at any time, speak a language other than English. The **ACCO** will then provide the **Contractor** the notices in Article 37.6.1 in that language or languages as may be required. The **Contractor** is responsible for all distributions under Article 37; and

37.6.6 Provision of Records: The **Contractor** and **Subcontractor(s)** shall produce within five (5) **Days** on the **Site** of the **Work** and upon a written order of the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, or the **Comptroller,** such records as are required to be kept by this Article 37.6; and

37.6.7 If this **Contract** is for an amount greater than $1,000,000, checks issued by the **Contractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**). For any subcontract for an amount greater than $750,000, checks issued by a **Subcontractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**); and

37.6.8 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 37.6.1 through 37.6.7 may result in the **Commissioner** declaring the **Contractor** or **Subcontractor(s)** in default and/or the withholding of payments otherwise due under the **Contract.**

37.7 The **Contractor** and its **Subcontractors** shall keep such employment and payroll records as are required by Section 220 of the Labor **Law**.

37.8 At the time the **Contractor** makes application for each partial payment and for final payment, the **Contractor** shall submit to the **Commissioner** a written payroll certification, in the form provided by this **Contract**, of compliance with the prevailing wage, minimum wage and other provisions and stipulations required by Labor **Law** Section 220 and of compliance with the training requirements of Labor law section 220-h set forth in Article 35.2. This certification of compliance with the provisions of this article shall be a condition precedent to payment and no payment shall be made to the **Contractor** unless and until each such certification shall have been submitted to and received by the **Commissioner**.

37.9 This **Contract** is executed by the **Contractor** with the express warranty and representation that the **Contractor** is not disqualified under the provisions of Section 220 of the Labor Law for the award of the **Contract.**

37.10 Any breach or violation of any of the foregoing shall be deemed a breach or violation of a material provision of this **Contract,** and grounds for cancellation thereof by the **City.**

ARTICLE 38. PAYROLL REPORTS

38.1 The **Contractor** shall maintain on the **Site** the original payrolls or transcripts thereof which the **Contractor** and its **Subcontractor(s)** are required to maintain pursuant to Labor **Law** Section 220. The **Contractor** and **Subcontractor(s)** shall submit original payrolls or transcripts, subscribed and affirmed by it as true, with each and every payment requisition. The **Contractor and Subcontractor(s)** shall produce within five (5) **Days** on the **Site** of the **Work** and upon a written order of the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, or the **Comptroller**, such original payrolls or transcripts thereof, subscribed and affirmed by it as true, and the statements signed by each worker pursuant to this Chapter VIII. In addition, the **Contractor** and **Subcontractor(s)** shall furnish to the **Engineer** upon written demand any other information to satisfy the **Engineer** that this Chapter VIII and the Labor **Law**, as to the hours of employment and rates of wages, are being observed. The **Contractor** shall maintain the payrolls or transcripts thereof for six (6) years from the date of completion of the **Work** on this **Contract.**

38.2 When directed by the **Engineer**, the **Contractor** or **Subcontractor** shall provide the **Engineer** with an attendance sheet for each **Day** on which **Work** is performed on the **Site.** Such attendance sheet shall be in a form acceptable to the **Agency** and shall provide information for employees of the **Contractor** and **Subcontractor(s).**

ARTICLE 39. DUST HAZARDS

39.1 Should a harmful dust hazard be created in performing the **Work** of this **Contract,** for the elimination of which appliances or methods have been approved by the Board of Standards and Appeals of the City of New York, such appliances and methods shall be installed, maintained, and effectively operated during the continuance of such harmful dust hazard. Failure to comply with this provision after notice shall make this **Contract** void.

CHAPTER IX
PARTIAL AND FINAL PAYMENTS

ARTICLE 40. CONTRACT PRICE

40.1 The **City** shall pay, and the **Contractor** agrees to accept, in full consideration for the **Contractor's** performance of the **Work** subject to the terms and conditions hereof, the lump sum price or unit prices which this **Contract** was awarded, plus the amount required to be paid for any **Extra Work** ordered by the **Commissioner** under Article 25, less credit for any **Work** omitted pursuant to Article 29.

ARTICLE 41. BID BREAKDOWN ON LUMP SUM

41.1 Within fifteen (15) **Days** after the commencement date specified in the Notice to Proceed, unless otherwise directed by the **Resident Engineer**, the **Contractor** shall submit to the **Resident Engineer** a breakdown of its bid price, or of lump sums bid for items of the **Contract**, showing the various operations to be performed

under the **Contract**, as directed in the progress schedule required under Article 9, and the value of each of such operations, the total of such items to equal the lump sum price bid. Said breakdown must be approved in writing by the **Resident Engineer**.

41.2 No partial payment will be approved until the **Contractor** submits a bid breakdown that is acceptable to the **Resident Engineer**.

41.3 The **Contractor** shall also submit such other information relating to the bid breakdown as directed by the **Resident Engineer**. Thereafter, the breakdown may be used only for checking the **Contractor's** applications for partial payments hereunder, but shall not be binding upon the **City**, the **Commissioner**, or the **Engineer** for any purpose whatsoever.

ARTICLE 42. PARTIAL PAYMENTS

42.1 From time to time as the **Work** progresses satisfactorily, but not more often than once a month, the **Contractor** may submit to the **Engineer** a requisition for a partial payment in the prescribed form, which shall contain an estimate of the quantity and the fair value of the **Work** done during the payment period.

42.2 Partial payments may be made for materials, fixtures and equipment in advance of their actual incorporation in the **Work**, as the **Commissioner** may approve, and upon the terms and conditions set forth in the General Conditions.

42.3 The **Contractor** shall also submit to the **Commissioner** in connection with every application for partial payment a verified statement in the form prescribed by the **Comptroller** setting forth the information required under Labor **Law** Section 220-a.

42.4 Within thirty (30) **Days** after receipt of such satisfactory payment application, the **Engineer** will prepare and certify, and the **Commissioner** will approve, a voucher for a partial payment in the amount of such approved estimate, less any and all deductions authorized to be made by the **Commissioner** under the terms of this **Contract** or by **Law**.

ARTICLE 43. PROMPT PAYMENT

43.1 The Prompt Payment provisions of the **PPB** Rules in effect at the time of the Bid will be applicable to payments made under this **Contract**. The provisions require the payment to **Contractor** of interest on payments made after the required payment date, except as set forth in the **PPB** Rules.

43.2 The **Contractor** shall submit a proper invoice to receive payment, except where the **Contract** provides that the **Contractor** will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

43.3 Determination of interest due will be made in accordance with the **PPB** Rules.

43.4 If the **Contractor** is paid interest, the proportionate share of that interest shall be forwarded by the **Contractor** to its **Subcontractor(s)**.

43.5 The **Contractor** shall pay each **Subcontractor** or **Materialman** not later than seven (7) **Days** after receipt of payment out of amounts paid to the **Contractor** by the **City** for **Work** performed by the **Subcontractor** or **Materialman** under this **Contract**.

43.5.1 If **Contractor** fails to make any payment to any **Subcontractor** or **Materialman** within seven (7) days after receipt of payment by the **City** pursuant to section 43.5 herein, then the **Contractor** shall pay interest on amounts due to such **Subcontractor** or **Materialman** at a rate of interest in effect on the date such payment is made by the **Contractor** computed in accordance with section 756-b (1)(b) of the NY General Business Law. Accrual of interest shall commence on the day immediately following the expiration of the seventh day following receipt of payment to the **Contractor** by the **City** and shall end on the date on which payment is made.

43.6 The **Contractor** shall include in each of its subcontracts a provision requiring each **Subcontractor** to make payment to each of its **Subcontractors** or suppliers for **Work** performed under this **Contract** in the same manner and within the same time period set forth above.

ARTICLE 44. SUBSTANTIAL COMPLETION PAYMENT

44.1 When the **Work** in the opinion of the **Commissioner**, has been substantially but not entirely completed, he/she shall issue a certificate of **Substantial Completion**.

44.2 The **Contractor** shall submit with the **Substantial Completion** requisition:

44.2.1 A Final Verified Statement of any and all alleged claims against the **City** and any pending dispute resolution procedures in accord with the **PPB** Rules and this **Contract**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay.

44.2.1(a) With respect to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the Corporation Counsel of the **City** shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this article is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor** upon acceptance of the **Substantial Completion** payment pursuant to this article, will have waived any such claims.

44.2.2 A **Final Approved Punch List**.

44.2.3 Where required, a request for a substantial or final extension of time.

44.3 The **Commissioner** shall issue a voucher calling for payment of any part or all of the balance due for **Work** performed under the **Contract**, including monies retained under Article 21, less any and all deductions authorized to be made by the **Commissioner**, under this **Contract** or by **Law**, and less twice the amount the **Commissioner** considers necessary to ensure the completion of the balance of the **Work** by the **Contractor**. Such a payment shall be considered a Partial and not a Final Payment. No **Substantial Completion** payment shall be made under this article where the **Contractor** shall fail to complete the **Work** within the time fixed for such completion in the Schedule A of the General Conditions, or within the time to which completion may have been extended, until an extension or extensions of time for the completion of **Work** have been acted upon pursuant to Article 13.

44.4 No further partial payments shall be made to the **Contractor** after the **Commissioner** issues a Certificate of **Substantial Completion**, except the **Substantial Completion** payment and **Contractor's** requisition that were properly filed with the **Commissioner** prior to the date of **Substantial Completion**; however, the **Commissioner** may grant a waiver for further partial payments after the date of **Substantial Completion** to permit payments for change order **Work** and/or release of retainage and deposits pursuant to Articles 21 and 24. Such waiver shall be in writing.

44.5 The **Contractor** acknowledges that nothing contained in this article is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 45. FINAL PAYMENT

45.1 After completion and **Final Acceptance** of the **Work**, the **Contractor** shall submit all required certificates and documents, together with a requisition for the balance claimed to be due under the **Contract**, less the amount authorized to be retained for maintenance under Article 24. A verified statement similar to that required in connection with applications for partial payments shall also be submitted to the **Commissioner.**

45.2 Amended Verified Statement of Claims: The **Contractor** shall also submit with the final requisition any amendments to the final verified statement of any and all alleged claims against the **City**, and any pending dispute resolution procedures in accord with the **PPB** Rules and this **Contract**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30.) that have occurred subsequent to **Substantial Completion**, setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each such item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay. With reference to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the Corporation Counsel of the **City** shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this article, is entitled to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor**, upon acceptance of the Final Payment pursuant to Article 46, will have waived any such claims.

45.3 Preparation of Final Voucher: Upon determining the balance due hereunder other than on account of claims, the **Engineer** will prepare and certify, for the Commissioner's approval, a voucher for final payment in that amount less any and all deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law.** In the case of a lump sum **Contract**, the **Commissioner** shall certify the voucher for final payment within thirty (30) **Days** from the date of completion and acceptance of the **Work**, provided all requests for extensions of time have been acted upon.

45.3.1 All prior certificates and vouchers upon which partial payments were made, being merely estimates made to enable the **Contractor** to prosecute the **Work** more advantageously, shall be subject to correction in the final voucher, and the certification of the **Engineer** thereon and the approval of the **Commissioner** thereof, shall be conditions precedent to the right of the **Contractor** to receive any money hereunder. Such final voucher shall be binding and conclusive upon the **Contractor.**

45.3.2 Payment pursuant to such final voucher, less any deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**, shall constitute the final payment, and shall be made by the **Comptroller** within thirty (30) **Days** after the filing of such voucher in his/her office.

45.4 The **Contractor** acknowledges that nothing contained in this article is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 46. ACCEPTANCE OF FINAL PAYMENT

46.1 The acceptance by the **Contractor**, or by anyone claiming by or through it, of the final payment, whether such payment be made pursuant to any judgment of any Court, or otherwise, shall constitute and operate as a release to the **City** from any and all claims of and liability to the **Contractor** for anything heretofore done or furnished for the **Contractor** relating to or arising out of this **Contract** and the **Work** done hereunder, and for any prior act, neglect or default on the part of the **City** or any of its officers, agents or employees, excepting only a claim against the **City** for the amounts deducted or retained in accordance with the terms and provisions of this **Contract** or by **Law**, and excepting any claims, not otherwise waived, or any pending dispute resolution procedures which are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45.

46.2 The **Contractor** is warned that the execution by it of a release, in connection with the acceptance of the final payment, containing language purporting to reserve claims other than those herein specifically excepted from the operation of this article, or those for amounts deducted by the **Commissioner** from the final requisition or by the **Comptroller** from the final payment as certified by the **Engineer** and approved by the **Commissioner**, shall not be effective to reserve such claims, anything stated to the **Contractor** orally or in writing by any officer, agent or employee of the **City** to the contrary notwithstanding.

46.3 Should the **Contractor** refuse to accept the final payment as tendered by the **Comptroller**, it shall constitute a waiver of any right to interest thereon.

46.4 The **Contractor**, however, shall not be barred from commencing an action for breach of **Contract** under this provision to the extent permitted by **Law** and by the terms of the **Contract** provided that a detailed and verified statement of claim is served upon the contracting **Agency** and **Comptroller** not later than forty (40) **Days** after the mailing of such final payment. The statement shall specify the items upon which the claim will be based and any such claim shall be limited to such items.

ARTICLE 47. APPROVAL BY PUBLIC DESIGN COMMISSION

47.1 All works of art, including paintings, mural decorations, stained glass, statues, bas-reliefs and other sculptures, monuments, fountains, arches, and other structures of a permanent character intended for ornament or commemoration, and every design of the same to be used in the performance of this **Contract**, and the design of all bridges, approaches, buildings, gates, fences, lamps, or structures to be erected, pursuant to the terms of this **Contract**, shall be submitted to the Art Commission, d/b/a the Public Design Commission of the City of New York, and shall be approved by the Public Design Commission prior to the erection or placing in the position of the same. The final payment shall not become due or payable under this **Contract** unless and until the Public Design Commission shall certify that the design for the **Work** herein contracted for has been approved by the said Public Design Commission, and that the same has been executed in substantial accordance with the design so approved, pursuant to the provisions of Chapter 37, Section 854 of the **City** Charter, as amended.

CHAPTER X
CONTRACTOR'S DEFAULT

ARTICLE 48. COMMISSIONER'S RIGHT TO DECLARE CONTRACTOR IN DEFAULT

48.1 In addition to those instances specifically referred to in other Articles herein, the **Commissioner** shall have the right to declare the **Contractor** in default of this **Contract** if:

48.1.1 The **Contractor** fails to commence **Work** when notified to do so by the **Commissioner**; or if

48.1.2 The **Contractor** shall abandon the **Work**; or if

48.1.3 The **Contractor** shall refuse to proceed with the **Work** when and as directed by the **Commissioner**; or if

48.1.4 The **Contractor** shall, without just cause, reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the **Commissioner**, to complete the **Work** in accordance with the Progress Schedule; or if

48.1.5 The **Contractor** shall fail or refuse to increase sufficiently such working force when ordered to do so by the **Commissioner**; or if

48.1.6 The **Contractor** shall sublet, assign, transfer, convert or otherwise dispose of this **Contract** other than as herein specified; or sell or assign a majority interest in the **Contractor**; or if

48.1.7 The **Contractor** fails to secure and maintain all required insurance; or if

48.1.8 A receiver or receivers are appointed to take charge of the **Contractor's** property or affairs; or if

48.1.9 The **Commissioner** shall be of the opinion that the **Contractor** is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the **Work**, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if

48.1.10 The **Commissioner** shall be of the opinion that the **Contractor** is or has been willfully or in bad faith violating any of the provisions of this **Contract**; or if

48.1.11 The **Commissioner** shall be of the opinion that the **Work** cannot be completed within the time herein provided therefor or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the **Commissioner's** opinion, attributable to conditions within the **Contractor's** control; or if

48.1.12 The **Work** is not completed within the time herein provided therefor or within the time to which the **Contractor** may be entitled to have such completion extended; or if

48.1.13 Any statement or representation of the **Contractor** in the **Contract** or in any document submitted by the **Contractor** with respect to the **Work**, the **Project**, or the **Contract** (or for purposes of securing the **Contract**) was untrue or incorrect when made.

48.1.14 The **Contractor** or any of its officers, directors, partners, five (5%) percent shareholders, principals, or other persons substantially involved in its activities, commits any of the acts or omissions specified as the grounds for debarment in the **PPB** Rules.

48.2 Before the **Commissioner** shall exercise his/her right to declare the **Contractor** in default, the **Commissioner** shall give the **Contractor** an opportunity to be heard, upon not less than two (2) **Days** notice.

ARTICLE 49. EXERCISE OF THE RIGHT TO DECLARE DEFAULT

49.1 The right to declare in default for any of the grounds specified or referred to in Article 48 shall be exercised by sending the **Contractor** a notice, signed by the **Commissioner**, setting forth the ground or grounds upon which such default is declared (hereinafter referred to as a "Notice of Default").

49.2 The **Commissioner's** determination that the **Contractor** is in default shall be conclusive, final and binding on the parties and such a finding shall preclude the **Contractor** from commencing a plenary action for any damages relating to the **Contract**. If the **Contractor** protests the determination of the **Commissioner**, the **Contractor** may commence a lawsuit in a court of competent jurisdiction of the State of New York under Article 78 of the New York Civil Practice Law and Rules.

ARTICLE 50. QUITTING THE SITE

50.1 Upon receipt of such notice the **Contractor** shall immediately discontinue all further operations under this **Contract** and shall immediately quit the **Site**, leaving untouched all plant, materials, equipment, tools and supplies then on the **Site**.

ARTICLE 51. COMPLETION OF THE WORK

51.1 The **Commissioner**, after declaring the **Contractor** in default, may then have the **Work** completed by such means and in such manner, by **Contract** with or without public letting, or otherwise, as he/she may deem advisable, utilizing for such purpose such of the **Contractor's** plant, materials, equipment, tools and supplies remaining on the **Site**, and also such **Subcontractors**, as he/she may deem advisable.

51.2 After such completion, the **Commissioner** shall make a certificate stating the expense incurred in such completion, which shall include the cost of re-letting and also the total amount of liquidated damages (at the rate provided for in the **Contract**) from the date when the **Work** should have been completed by the **Contractor** in accordance with the terms hereof to the date of actual completion of the **Work**. Such certificate shall be binding and conclusive upon the **Contractor**, its Sureties, and any person claiming under the **Contractor**, as to the amount thereof.

51.3 The expense of such completion, including any and all related and incidental costs, as so certified by the **Commissioner**, and any liquidated damages assessed against the **Contractor**, shall be charged against and deducted out of monies which are earned by the **Contractor** prior to the date of default. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

ARTICLE 52. PARTIAL DEFAULT

52.1 In case the **Commissioner** shall declare the **Contractor** in default as to a part of the **Work** only, the **Contractor** shall discontinue such part, shall continue performing the remainder of the **Work** in strict conformity with the terms of this **Contract**, and shall in no way hinder or interfere with any **Other Contractor(s)** or persons whom the **Commissioner** may engage to complete the **Work** as to which the **Contractor** was declared in default.

52.2 The provisions of this Chapter relating to declaring the **Contractor** in default as to the entire **Work** shall be equally applicable to a declaration of partial default, except that the **Commissioner** shall be entitled to utilize for completion of the part of the **Work** as to which the **Contractor** was declared in default only such plant, materials, equipment, tools and supplies as had been previously used by the **Contractor** on such part.

ARTICLE 53. PERFORMANCE OF UNCOMPLETED WORK

53.1 In completing the whole or any part of the **Work** under the provision of this Chapter X, the **Commissioner** shall have the power to depart from or change or vary the terms and provisions of this **Contract**, provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variation, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the **Commissioner's** certificate of the cost of completion referred to in Article 51, nor shall it constitute a defense to an action to recover the amount by which such certificate exceeds the amount which would have been payable to the **Contractor** hereunder but for its default.

ARTICLE 54. OTHER REMEDIES

54.1 In addition to the right to declare the **Contractor** in default pursuant to this Chapter X, the **Commissioner** shall have the absolute right, in his/her sole discretion and without a hearing, to complete or cause to complete in the same manner as described in Articles 51 and 53, any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the Final Approved Punch List. A written notice of the exercise of this right shall be sent to the **Contractor** who shall immediately quit the **Site** in accordance with the provisions of Article 50.

54.2 The previous provisions of this Chapter X shall be in addition to any and all other legal or equitable remedies permissible in the premises.

54.3 The exercise by the **City** of any remedy set forth herein shall not be deemed a waiver by the **City** of any other legal or equitable remedy contained in this **Contract** or provided under **Law**.

54.4 The expense of such completion, including any and all related and incidental costs, as so certified by the **Commissioner**, shall be charged against and deducted out of monies which have been earned by the **Contractor** prior to the date of the exercise of the right set forth in Article 54.1; the balance of such monies, if any, subject to the other provisions of this **Contract**, to be paid to the **Contractor** without interest after such completion. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

CHAPTER XI
MISCELLANEOUS PROVISIONS

ARTICLE 55. CONTRACTOR'S WARRANTIES

55.1 In consideration of, and to induce, the award of this **Contract** to the **Contractor**, the **Contractor** represents and warrants:

55.1.1 That it is financially solvent, sufficiently experienced and competent to perform the **Work**; and

55.1.2 That the facts stated in its bid and the information given by it pursuant to the Information for Bidders is true and correct in all respects; and

55.1.3 That it has read and complied with all requirements set forth in the **Contract.**

ARTICLE 56. CLAIMS AND ACTIONS THEREON

56.1 Any claim, that is not subject to dispute resolution under the **PPB** Rules or this **Contract**, against the **City** for damages for breach of **Contract** shall not be made or asserted in any lawsuit, unless the **Contractor** shall have strictly complied with all requirements relating to the giving of notice and of information with respect to such claims, as herein before provided.

56.2 Nor shall any lawsuit be instituted or maintained on any such claims unless such lawsuit is commenced within six (6) months after the date the **Commissioner** issues a Certificate of **Substantial Completion** pursuant to Article 44; except that:

56.2.1 Any claims arising out of events occurring after the date the **Commissioner** issues a Certificate of **Substantial Completion** and before **Final Acceptance** of the **Work** shall be asserted within six (6) months of **Final Acceptance** of the **Work;**

56.2.2 Any claims for monies deducted, retained or withheld under the provisions of this **Contract** shall be asserted within six (6) months after the date when such monies becomes due and payable hereunder; and

56.2.3 If the **Commissioner** exercises his/her right to terminate the **Contract** pursuant to Article 64, any such lawsuit shall be commenced within six (6) months of the date the **Commissioner** exercises said right.

ARTICLE 57. INFRINGEMENT

57.1 The **Contractor** shall be solely responsible for and shall indemnify the **City** against any and all claims and judgments for damages for any infringement of copyright and patents or use of patented articles, tools, materials, equipment, appliances or processes in the performance or completion of the **Work**, including all costs and expenses which the **City** shall or may incur or be obligated to pay by reason thereof.

ARTICLE 58. NO CLAIM AGAINST OFFICERS, AGENTS OR EMPLOYEES

58.1 No claim whatsoever shall be made by the **Contractor** against any officer, agent or employee of the **City** for, or on account of, anything done or omitted to be done in connection with this **Contract.**

ARTICLE 59. SERVICES OF NOTICES

59.1 The **Contractor** hereby designates the business address specified in its bid, as the place where all notices, directions or other communications to the **Contractor** may be delivered, or to which they may be mailed. Actual delivery of any such notice, direction or communication to the aforesaid place, or depositing it in a postpaid wrapper addressed thereto in any post office box (P.O. Box) regularly maintained by the United States Postal Service, shall be conclusively deemed to be sufficient service thereof upon the **Contractor** as the date of such delivery or deposit.

59.2 Such address may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor**, and delivered to the **Commissioner**.

59.3 Nothing herein contained shall, however, be deemed to preclude or render inoperative the service of any notice, direction or other communication upon the **Contractor** personally, or, if the **Contractor** is a corporation, upon any officer thereof.

ARTICLE 60. UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT

60.1 If this **Contract** contains any unlawful provision not an essential part of the **Contract** and which shall not appear to have been a controlling or material inducement to the making thereof, the same shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the **Contract** without affecting the binding force of the remainder.

ARTICLE 61. ALL LEGAL PROVISIONS DEEMED INCLUDED

61.1 It is the intent and understanding of the parties to this **Contract** that each and every provision of **Law** required to be inserted in this **Contract** shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is to be deemed to be inserted herein, and if, through mistake or otherwise, any such provision is not inserted, or is not inserted in correct form, then this **Contract** shall forthwith upon the application of either party be amended by such insertion so as to comply strictly with the **Law** and without prejudice to the rights of either party hereunder.

ARTICLE 62. TAX EXEMPTION

62.1 The **City** is exempt from payment of Federal, State, local taxes and Sales and Compensation Use Taxes of the State of New York and of cities and counties on all materials and supplies sold to the **City** pursuant to the provisions of this **Contract**. These taxes are not to be included in bids. However, this exemption does not apply to tools, machinery, equipment or other property leased by or to the **Contractor** or a **Subcontractor**, or to supplies and materials which even though they are consumed, are not incorporated into the completed **Work** (consumable supplies), and the **Contractor** and its **Subcontractors** shall be responsible for and pay any and all applicable taxes, including Sales and Compensation Use Taxes, on such leased tools, machinery, equipment or other property and upon all such unincorporated supplies and materials.

62.2 The **Contractor** agrees to sell and the **City** agrees to purchase all supplies and materials, other than consumable supplies, required, necessary or proper for or incidental to the construction of the **Project** covered by this **Contract**. The sum paid under this **Contract** for such supplies and materials shall be in full payment and consideration for the sale of such supplies and materials herein.

> 62.2.1 The **Contractor** agrees to construct the **Project** and to perform all **Work**, labor and services rendered, necessary, proper or incidental thereto for the sum shown in the bid for the performance of such **Work**, labor and services, and the sum so paid pursuant to this **Contract** for such **Work**, labor, etc., shall be in full consideration for the performance by the **Contractor** of all its duties and obligations under this **Contract** in connection with said **Work** and labor.

62.3 The purchase by the **Contractor** of the supplies and materials sold hereunder shall be a purchase or procurement for resale and therefore not subject to the New York State or **City** Sales or Compensation Use Taxes or any such taxes of cities or counties. The sale of such supplies and materials by the **Contractor** to the **City** is exempt from the aforesaid sales or compensating use taxes. With respect to such supplies and materials, the

Contractor, at the request of the **City**, shall furnish to the **City** such Bills of Sale and other instruments as may be required by the **City**, properly executed, acknowledged and delivered assuring to the **City** title to such supplies and materials, free of liens and/or encumbrances, and the **Contractor** shall mark or otherwise identify all such materials as the property of the **City**.

62.4 Title to all materials to be sold by the **Contractor** to the **City** pursuant to the provisions of the **Contract** shall immediately vest in and become the sole property of the **City** upon delivery of such supplies and materials to the **Site** and prior to its becoming a part of the permanent structure and/or construction. Notwithstanding such transfer of title, the **Contractor** shall have the full and continuing responsibility to install such materials and supplies in accordance with the provisions of this **Contract**, protect them, maintain them in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional materials in place of any that may be lost, stolen or rendered unusable, without cost to the **City**, until such time as the **Work** covered by the **Contract** is fully accepted by the **City**. Such transfer of title shall in no way affect any of the **Contractor's** obligations hereunder. In the event that, after title has passed to the **City**, any of such supplies and materials are rejected as being defective or otherwise unsatisfactory, title to all such supplies and materials shall be deemed to have been transferred back to the **Contractor**.

62.5 The purchase by **Subcontractors** of supplies and materials to be sold hereunder shall also be a purchase or procurement for resale to the **Contractor** (either directly or through other **Subcontractors**) and therefore not subject to the aforesaid Sales or Compensation Use Taxes, provided that the subcontract agreements provide for the resale of such supplies and materials prior to and separate and apart from the incorporation of such supplies and materials into the permanent structure and/or construction and that such subcontract agreements are in a form similar to this **Contract** with respect to the separation of the sale of materials from the **Work** and labor, services, consumable supplies and any other matters to be provided, and provided further that the subcontract agreements provide separate prices for materials and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for supplies and materials from the payments for other **Work** and labor and other things to be provided.

62.6 The **Contractor** and its **Subcontractors** and Materialmen shall obtain any and all necessary **Contractor** Exempt Purchase Certificates or Resale Certificates from the appropriate governmental **Agency** or **Agencies**, and furnish a **Contractor** Exempt Purchase Certificate or Resale Certificate to all persons, firms or corporations from which they purchase supplies and materials for the performance of the **Work** covered by this **Contract**.

62.7 In the event any of the provisions of this article shall be deemed to be in conflict with any other provisions of this **Contract** or create any ambiguity, then the provisions of this article shall control.

ARTICLE 63. INVESTIGATION(S) CLAUSE

63.1 The parties to this **Contract** agree to cooperate fully and faithfully with any investigation, audit or inquiry conducted by a United States, a State of New York (State) or a **City** governmental **Agency** or authority that is empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath, or conducted by the Inspector General of a governmental **Agency** that is a party in interest to the transaction, submitted bid, submitted proposal, **Contract**, lease, permit or license that is the subject of the investigation, audit or inquiry.

63.2 If any person who has been advised that his/her statement, and any information from such statement, will not be used against him/her in any subsequent criminal proceeding refuses to testify before a grand jury or other governmental **Agency** or authority empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath concerning the award of or performance under any transaction, agreement, lease, permit, **Contract**, or license entered into with the **City**, the State, or any political subdivision or

public authority thereof, or the Port Authority of New York and New Jersey, or any local development corporation within the **City**, or any public benefit corporation organized under the **Laws** of the State of New York, or;

63.3 If any person refuses to testify for a reason other than the assertion of his/her privilege against self incrimination in an investigation, audit or inquiry conducted by a **City** or State governmental **Agency** or authority empowered directly or by designation to compel the attendance of witnesses and to take testimony under oath, or by the Inspector General of the governmental **Agency** that is a party in interest in, and is seeking testimony concerning the award of, or performance under any transaction, agreement, lease, permit, **Contract**, or license entered into with the **City**, the State, or any political subdivision thereof or any local development corporation within the **City**, then;

63.4 The **Commissioner** whose **Agency** is a party in interest to the transaction, submitted bid, submitted proposal, **Contract**, lease, permit, or license shall convene a hearing, upon not less than five (5) days written notice to the parties involved to determine if any penalties should attach for the failure of a person to testify.

63.5 If any non-governmental party to the hearing requests an adjournment, the **Commissioner** who convened the hearing may, upon granting the adjournment, suspend any **Contract**, lease, permit, or license, pending the final determination pursuant to Article 63.7 without the **City** incurring any penalty or damages for delay or otherwise.

63.6 The penalties which may attach after a final determination by the **Commissioner** may include but shall not exceed:

63.6.1 The disqualification for a period not to exceed five (5) years from the date of an adverse determination for any person, or any entity of which such person was a member at the time the testimony was sought, from submitting bids for, or transacting business with, or entering into or obtaining any **Contract**, lease, permit or license with or from the **City**; and/or

63.6.2 The cancellation or termination of any and all such existing **City Contracts**, leases, permits or licenses that the refusal to testify concerns and that have not been assigned as permitted under this **Agreement**, nor the proceeds of which pledged, to an unaffiliated and unrelated institutional lender for fair value prior to the issuance of the notice scheduling the hearing, without the **City** incurring any penalty or damages on account of such cancellation or termination; monies lawfully due for goods delivered, **Work** done, rentals, or fees accrued prior to the cancellation or termination shall be paid by the **City**.

63.7 The **Commissioner** shall consider and address in reaching his/her determination and in assessing an appropriate penalty the factors in Articles 63.7.1 and 63.7.2. The **Commissioner** may also consider, if relevant and appropriate, the criteria established in Articles 63.7.3 and 63.7.4, in addition to any other information which may be relevant and appropriate:

63.7.1 The party's good faith endeavors or lack thereof to cooperate fully and faithfully with any governmental investigation or audit, including but not limited to the discipline, discharge, or disassociation of any person failing to testify, the production of accurate and complete books and records, and the forthcoming testimony of all other members, agents, assignees or fiduciaries whose testimony is sought.

63.7.2 The relationship of the person who refused to testify to any entity that is a party to the hearing, including but not limited to, whether the person whose testimony is sought has an ownership interest in the entity and/or the degree of authority and responsibility the person has within the entity.

63.7.3 The nexus of the testimony sought to the subject entity and its **Contracts**, leases, permits or licenses with the **City**.

63.7.4 The effect a penalty may have on an unaffiliated and unrelated party or entity that has a significant interest in an entity subject to penalties under Article 63.6, provided that the party or entity has given actual notice to the **Commissioner** upon the acquisition of the interest, or at the hearing called for in Article 63.4, gives notice and proves that such interest was previously acquired. Under either circumstance the party or entity shall present evidence at the hearing demonstrating the potential adverse impact a penalty will have on such person or entity.

63.8 Definitions:

63.8.1 The term "license" or "permit" as used herein shall be defined as a license, permit, franchise or concession not granted as a matter of right.

63.8.2 The term "person" as used herein shall be defined as any natural person doing business alone or associated with another person or entity as a partner, director, officer, principal or employee.

63.8.3 The term "entity" as used herein shall be defined as any firm, partnership, corporation, association, joint venture, or person that receives monies, benefits, licenses, leases, or permits from or through the **City** or otherwise transacts business with the **City**.

63.8.4 The term "member" as used herein shall be defined as any person associated with another person or entity as a partner, director, officer, principal or employee.

63.9 In addition to and notwithstanding any other provision of this **Contract**, the **Commissioner** may in his/her sole discretion terminate this **Contract** upon not less than three (3) **Days** written notice in the event the **Contractor** fails to promptly report in writing to the **Commissioner** of the Department of Investigations ("DOI") of the **City** any solicitation of money, goods, requests for future employment or other benefit or thing of value, by or on behalf of any employee of the **City** or other person, firm, corporation or entity for any purpose which may be related to the procurement or obtaining of this **Contract** by the **Contractor**, or affecting the performance of this **Contract**.

ARTICLE 64. TERMINATION BY THE CITY

64.1 In addition to termination pursuant to any other article of this **Contract**, the **Commissioner** may, at any time, terminate this **Contract** by written notice to the **Contractor**. In the event of termination, the **Contractor** shall, upon receipt of such notice, unless otherwise directed by the **Commissioner**:

64.1.1 Stop **Work** on the date specified in the notice;

64.1.2 Take such action as may be necessary for the protection and preservation of the **City's** materials and property;

64.1.3 Cancel all cancelable orders for material and equipment;

64.1.4 Assign to the **City** and deliver to the **Site** or another location designated by the **Commissioner**, any non-cancelable orders for material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract** and not incorporated in the **Work**;

64.1.5 Take no action which will increase the amounts payable by the **City** under this **Contract.**

64.2 In the event of termination by the **City** pursuant to this article, payment to the **Contractor** shall be in accordance with Articles 64.2.1, 64.2.2 or 64.2.3, to the extent that each respective article applies.

64.2.1 Lump Sum Contracts or Items: On all lump sum **Contracts**, or on lump sum items in a **Contract**, the **City** will pay the **Contractor** the sum of Articles 64.2.1(a) and 64.2.1(b), less all payments previously made pursuant to this **Contract.** On lump sum **Contracts** only, the **City** will also pay the **Contractor** an additional sum as provided in 64.2.1(c).

64.2.1(a) For **Work** completed prior to the notice of termination, the **Contractor** shall be paid a pro rata portion of the lump sum bid amount, plus approved change orders, based upon the percent completion of the **Work**, as determined by the **Commissioner.** For the purpose of determining the pro rata portion of the lump sum bid amount to which the **Contractor** is entitled, the Bid Breakdown submitted in accordance with Article 41 shall be considered, but shall not be dispositive. The **Commissioner's** determination hereunder shall be final, binding and conclusive.

64.2.1(b) For non-cancelable material and equipment, less salvage value, that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated in the **Work**, the **Contractor** shall be paid the lesser of:

64.2.1(b)(i) The direct cost, as defined in Article 64.2.4; or

64.2.1(b)(ii) The fair and reasonable value, whichever is less, of such material and equipment, plus necessary and reasonable delivery costs.

64.2.1(b)(iii) In addition, the **Contractor** shall be paid five (5%) percent of Article 64.2.1(b)(i) or Article 64.2.1(b)(ii), whichever applies.

64.2.1(c) Except as otherwise provided in Article 64.2.1(d), on all lump sum **Contracts**, the **Contractor** shall be paid the percentage indicated below applied to the difference between the total lump sum bid amount and the total of all payments made prior to the notice of termination plus all payments allowed pursuant to Articles 64.2.1(a) and 64.2.1(b):

64.2.1(c)(i) Five (5%) percent of the first five million ($5,000,000.) dollars; and

64.2.1(c)(ii) Three (3%) percent of any amount between five million ($5,000,000.) dollars and fifteen million ($15,000,000.) dollars; plus

64.2.1(c)(iii) One (1%) percent of any amount over fifteen million ($15,000,000.) dollars.

64.2.1(d) In the event the City terminates a lump sum **Contract** pursuant to this article within ninety (90) days after registration of the **Contract** with the **Comptroller**, the **Contractor** shall be paid one (1%) percent of the difference between the lump sum bid amount and the total of all payments made pursuant to this article.

64.2.2 Unit Price Contracts or Items: On all unit price **Contracts**, or on unit price items in a **Contract**, the **City** will pay the **Contractor** the sum of Articles 64.2.2(a) and 64.2.2(b), less all payments previously made pursuant to this **Contract**:

64.2.2(a) For all completed units, the unit price stated in the **Contract**, and

64.2.2(b) For units that have been ordered but are only partially completed, the **Contractor** will be paid:

64.2.2(b)(i) A pro rata portion of the unit price stated in the **Contract** based upon the percent completion of the unit and

64.2.2(b)(ii) For non-cancelable material and equipment, payment will be made pursuant to Article 64.2.1(b).

64.2.3 Time and Material Contracts or Items: On all **Contracts** or items in a **Contract** where time and material records are specified as the basis for payment of the **Work**, the **Contractor** shall be paid in accordance with Article 26, less all payments previously made pursuant to this **Contract**.

64.2.4 Direct Costs: Direct Costs as used in this article shall mean:

64.2.4(a) The actual purchase price of material and equipment, plus necessary and reasonable delivery costs,

64.2.4(b) The actual cost of labor involved in construction and installation at the **Site**, and

64.2.4(c) The actual cost of necessary bonds and insurance purchased pursuant to requirements of this **Contract** less any amounts that have been or should be refunded by the **Contractor's** sureties or insurance carriers.

64.2.4(d) Direct Cost shall not include overhead.

64.3 In no event shall any payments under this article exceed the **Contract** price for such items.

64.4 All payments pursuant to this article shall be in the nature of liquidated damages and shall be accepted by the **Contractor** in full satisfaction of all claims against the **City**.

64.5 The **City** may deduct or set off against any sums due and payable pursuant to this article, any deductions authorized by this **Contract** or by **Law** (including but not limited to liquidated damages) and any claims it may have against the **Contractor**. The **City's** exercise of the right to terminate the **Contract** pursuant to this article shall not impair or otherwise effect the **City's** right to assert any claims it may have against the **Contractor** in a plenary action.

64.6 Where the **Work** covered by the **Contract** has been substantially completed, as determined in writing by the **Commissioner**, termination of the **Work** shall be handled as an omission of **Work** pursuant to Articles 29 and 33, in which case a Change Order will be issued to reflect an appropriate reduction in the **Contract** Sum, or if the amount is determined after final payment, such amount shall be paid by the **Contractor**.

ARTICLE 65. CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE

65.1 This **Contract** shall be deemed to be executed in the **City** of New York, State of New York, regardless of the domicile of the **Contractor**, and shall be governed by and construed in accordance with the **Laws** of the State of New York and the **Laws** of the United States, where applicable.

65.2 The parties agree that any and all claims asserted against the **City** arising under this **Contract** or related thereto shall be heard and determined in the courts of the State of New York ("New York State Courts") located in the **City** and County of New York. To effect this **Contract** and intent, the **Contractor** agrees:

65.2.1 If the **City** initiates any action against the **Contractor** in Federal Court or in New York State Court, service of process may be made on the **Contractor** either in person, wherever such **Contractor** may be found, or by registered mail addressed to the **Contractor** at its address as set forth in this **Contract**, or to such other address as the **Contractor** may provide to the **City** in writing; and

65.2.2 With respect to any action between the **City** and the **Contractor** in New York State Court, the **Contractor** hereby expressly waives and relinquishes any rights it might otherwise have:

65.2.2(a) To move to dismiss on grounds of forum non conveniens;

65.2.2(b) To remove to Federal Court; and

65.2.2(c) To move for a change of venue to a New York State Court outside New York County.

65.2.3 With respect to any action brought by the **City** against the **Contractor** in Federal Court located in the **City**, the **Contractor** expressly waives and relinquishes any right it might otherwise have to move to transfer the action to a United States Court outside the **City**.

65.2.4 If the **Contractor** commences any action against the **City** in a Court located other than in the **City** and State of New York, upon request of the **City**, the **Contractor** shall either consent to a transfer of the action to a State Court of competent jurisdiction located in the **City** and State of New York or, if the Court where the action is initially brought will not or cannot transfer the action, the **Contractor** shall consent to dismiss such action without prejudice and may thereafter reinstate the action in a State Court of competent jurisdiction in the **City**.

65.3 If any provision(s) of this article is held unenforceable for any reason, each and all other provision(s) shall nevertheless remain in full force and effect.

ARTICLE 66. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

66.1 The **Contractor** agrees that neither the **Contractor** nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce promulgated thereunder.

66.2 Upon the final determination by the Commerce Department or any other **Agency** of the United States as to, or conviction of the **Contractor** or a substantially-owned affiliated company thereof, participation in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations promulgated thereunder, the **Comptroller** may, at his/her option, render forfeit and void this **Contract**.

66.3 The **Contractor** shall comply in all respects, with the provisions of Section 6-114 of the Administrative Code and the rules and regulations issued by the **Comptroller** thereunder.

ARTICLE 67. LOCALLY BASED ENTERPRISE PROGRAM

67.1 This **Contract** is subject to the requirements of Section 6-108.1 of the Administrative Code and regulations promulgated thereunder. No construction **Contract** shall be awarded unless and until these requirements have been complied with in their entirety.

67.2 Unless specifically waived by the **Commissioner** with the approval of the Division of Economic and Financial Opportunity of the Department of Business Services, if any portion of the **Contract** is subcontracted, not less than ten (10%) percent of the total dollar amount of the **Contract** shall be awarded to locally based enterprise ("LBEs"); except that where less than ten (10%) percent of the total dollar amount of the **Contract** is subcontracted, such lesser percentage shall be so awarded.

67.3 The prime **Contractor** shall not require performance and payment bonds from LBE **Subcontractors.**

67.4 If the **Contractor** has indicated prior to award that no **Work** will be subcontracted, no **Work** shall be subcontracted without the prior approval of the **Commissioner,** which shall be granted only if the **Contractor** makes a good faith effort beginning at least six (6) weeks before the **Work** is to be performed to obtain LBE **Subcontractors** to perform the **Work.**

67.5 If the **Contractor** has not identified sufficient LBE **Subcontractors** prior to award, it shall sign a letter of compliance stating that it complies with Section 6-108.1 of the Administrative Code, recognizes that achieving the LBE requirement is a condition of its **Contract,** and shall submit documentation demonstrating its good faith efforts to obtain LBEs. After award, the **Contractor** shall begin to solicit LBE's to perform subcontracted **Work** at least six (6) weeks before the date such **Work** is to be performed and shall demonstrate that a good faith effort has been made to obtain LBE's on each subcontract until it meets the required percentage.

67.6 Failure of the **Contractor** to comply with the requirements of Section 6-108.1 of the Administrative Code and the regulations promulgated thereunder shall constitute a material breach of **Contract.** Remedy for such breach of **Contract** may include the imposition of any or all of the following sanctions:

67.6.1 Reducing a **Contractor's** compensation by an amount equal to the dollar value of the percentage of the LBE subcontracting requirement not complied with;

67.6.2 Declaring the **Contractor** in default;

67.6.3 Where non-compliance is by an LBE, de-certifying and declaring the LBE ineligible to participate in the LBE program for a period of up to three (3) years.

ARTICLE 68. ANTITRUST

68.1 The **Contractor** hereby assigns, sells and transfers to the **City** all right, title and interest in and to any claims and causes of action arising under the antitrust **Laws** of New York State or of the United States relating to the particular goods or services purchased or procured by the **City** under this **Contract.**

ARTICLE 69. MacBRIDE PRINCIPLES PROVISIONS

69.1 Notice To All Prospective **Contractors**:

69.1.1 Local Law No. 34 of 1991 became effective on September 10, 1991 and added Section 6-115.1 of the Administrative Code. The local **Law** provides for certain restrictions on **City Contracts** to express the opposition of the people of the **City** to employment discrimination practices in Northern Ireland to promote freedom of work-place opportunity.

69.1.2 Pursuant to Section 6-115.1, prospective **Contractors** for **Contracts** to provide goods or services involving an expenditure of an amount greater than ten thousand ($10,000.) dollars, or for construction involving an amount greater than fifteen thousand ($15,000.) dollars, are asked to sign a rider in which they covenant and represent, as a material condition of their **Contract**, that any business operations in Northern Ireland conducted by the **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** will be conducted in accordance with the MacBride Principles of nondiscrimination in employment.

69.1.3 Prospective **Contractors** are not required to agree to these conditions. However, in the case of **Contracts** let by competitive sealed bidding, whenever the lowest responsible bidder has not agreed to stipulate to the conditions set forth in this notice and another bidder who has agreed to stipulate to such conditions has submitted a bid within five (5%) percent of the lowest responsible bid for a **Contract** to supply goods, services or contraction of comparable quality, the **Agency** shall refer such bids to the Mayor, the Speaker or other officials, as appropriate, who may determine, in accordance with applicable **Law** and rules, that it is in the best interest of the **City** that the **Contract** be awarded to other than the lowest responsible pursuant to Section 313(b)(2) of the **City** Charter.

69.1.4 In the case of **Contracts** let by other than competitive sealed bidding, if a prospective **Contractor** does not agree to these conditions, no **Agency**, elected official or the **City** Council shall award the **Contract** to that bidder unless the **Agency** seeking to use the goods, services or construction certifies in writing that the **Contract** is necessary for the **Agency** to perform its functions and there is no other responsible **Contractor** who will supply goods, services or construction of comparable quality at a comparable price.

69.2 In accordance with Section 6-115.1 of the Administrative Code, the **Contractor** stipulates that such **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** either:

69.2.1 Have no business operations in Northern Ireland, or

69.2.2 Shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

69.3 For purposes of this Article, the following terms shall have the following meanings:

69.3.1 "MacBride Principles" shall mean those principles relating to nondiscrimination in employment and freedom of work-place opportunity which require employers doing business in Northern Ireland to:

69.3.1(a) increase the representation of individuals from under-represented religious groups in the workforce, including managerial, supervisory, administrative, clerical and technical jobs;

69.3.1(b) take steps to promote adequate security for the protection of employees from under-represented religious groups both at the work-place and while traveling to and from **Work**;

69.3.1(c) ban provocative religious or political emblems from the workplace;

69.3.1(d) publicly advertise all job openings and make special recruitment efforts to attract applicants from under-represented religious groups;

69.3.1(e) establish layoff, recall and termination procedures which do not in practice favor a particular religious group;

69.3.1(f) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

69.3.1(g) develop training programs that will prepare substantial numbers of current employees from under-represented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade and improve the skills of workers from under-represented religious groups;

69.3.1(h) establish procedures to asses, identify and actively recruit employees from under-represented religious groups with potential for further advancement; and

69.3.1(i) appoint a senior management staff member to oversee affirmative action efforts and develop a timetable to ensure their full implementation.

69.4 The **Contractor** agrees that the covenants and representations in Article 69.2 are material conditions to this **Contract**. In the event the **Agency** receives information that the **Contractor** who made the stipulation required by this Article is in violation thereof, the **Agency** shall review such information and give the **Contractor** an opportunity to respond. If the **Agency** finds that a violation has occurred, the **Agency** shall have the right to declare the **Contractor** in default in default and/or terminate this **Contract** for cause and procure supplies, services or **Work** from another source in the manner the **Agency** deems proper. In the event of such termination, the **Contractor** shall pay to the **Agency**, or the **Agency** in its sole discretion may withhold from any amounts otherwise payable to the **Contractor**, the difference between the **Contract** price for the uncompleted portion of this **Contract** and the cost to the **Agency** of completing performance of this **Contract** either itself or by engaging another Contractor or Contractors. In the case of a requirement **Contract**, the **Contractor** shall be liable for such difference in price for the entire amount of supplies required by the **Agency** for the uncompleted term of **Contractor's Contract**. In the case of a construction **Contract**, the **Agency** shall also have the right to hold the **Contractor** in partial or total default in accordance with the default provisions of this **Contract**, and/or may seek debarment or suspension of the **Contractor**. The rights and remedies of the **Agency** hereunder shall be in addition to, and not in lieu of, any rights and remedies the **Agency** has pursuant to this **Contract** or by operation of **Law**.

ARTICLE 70. HEALTH INSURANCE COVERAGE

70.1 If the price for which this **Contract** was awarded exceeds $100,000, or if the price for which this **Contract** was awarded when combined with other construction or services contracts awarded the **Contractor** by the **City** in the year prior to award of this **Contract** exceeds $100,000, the **Contractor**, following registration of the **Contract**, shall be required to submit responses to requests for information regarding the nature of any health

insurance provided by the Contractor to its employees and their spouses and domestic partners, upon request of the **Agency** or other designated **City** agency.

ARTICLE 71. PROHIBITION OF TROPICAL HARDWOODS

71.1 Tropical hardwoods, as defined in Section 165 of the New York State Finance **Law** ("Finance **Law**"), shall not be utilized in the performance of this **Contract** except as expressly permitted by Section 165 of the Finance **Law**.

ARTICLE 72. CONFLICTS OF INTEREST

72.1 Section 2604 of the **City** Charter and other related provisions of the **City** Charter, the Administrative Code and the Penal **Law** are applicable under the terms of this **Contract** in relation to Conflicts of Interest and shall be extended to **Subcontractors** authorized to perform **Work**, labor and services pursuant to this **Contract** and further, it shall be the duty and responsibility of the **Contractor** to so inform its respective **Subcontractors**. Notice is hereby given that, under certain circumstances, penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

ARTICLE 73. MERGER CLAUSE

73.1 The Written **Contract** herein, contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this **Contract** shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

ARTICLE 74. STATEMENT OF WORK

74.1 The **Contractor** shall furnish all labor and materials and perform all **Work** in strict accordance with the **Specifications** and **Addenda** thereto, numbered _____.

ARTICLE 75. COMPENSATION TO BE PAID TO CONTRACTOR

75.1 The **City** will pay and the **Contractor** will accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided herein, the total sum of: _____ Dollars, ($_____), this said sum being the Amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract**.

ARTICLE 76. ELECTRONIC FUNDS TRANSFER

76.1 In accordance with Section 6-107.1 of the New York City Administrative Code, the Contractor agrees to accept payments under this Agreement from the City by electronic funds transfer. An electronic funds transfer is any transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Prior to the first payment made under this Agreement, Contractor shall designate one financial institution or other authorized payment agent and shall complete the attached "EFT Vendor Payment Enrollment Form" in order to provide the Commissioner of Finance with information necessary for Contractor to receive electronic funds transfer payments through the designated financial institution or authorized payment agent. The crediting of the amount of a payment to the appropriate

account on the books of a financial institution or other authorized payment agent designated by the Contractor shall constitute full satisfaction by the City for the amount of the payment under this agreement. The account information supplied by the Contractor to facilitate the electronic funds transfer shall remain confidential to the fullest extent provided by law.

76.2 The agency head may waive the application of the requirements herein to payments on contracts entered into pursuant to §315 of the City Charter. In addition, the Commissioner of the Department of Finance and the Comptroller may jointly issue standards pursuant to which the contracting agency may waive the requirements hereunder for payments in the following circumstances: (i) for individuals or classes of individuals for whom compliance imposes a hardship; (ii) for classifications or types of checks; or (iii) in other circumstances as may be necessary in the interest of the City.

GENERAL CONDITIONS
SECTION A - GENERAL PROVISIONS

ARTICLE 1. **SCOPE AND INTENT:** For Location and Description of Work, see General Provisions, Section C, Special Provisions.

WORK INCLUDES: The Contractor shall furnish all labor, materials, power, light, heat, fuel, water, tools, appliances, equipment, supplies, and other means of construction necessary or proper for performing and completing the work; obtain and pay for all required permits; perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property to the satisfaction of the Engineer and in strict accordance with the Contract Documents; protect the work during construction, clean up the work and maintain it during and after construction; do all the work and pay all costs incidental thereto.

INCIDENTAL WORK: The Contractor will do all work and pay all costs of cutting, protecting, supporting, maintaining, and restoring all surface and subsurface structures, and all other property including pipes, conduits, ducts and appurtenances, public or private in the vicinity of the work (except such which by law, franchise, permits, contract, consent or agreement the owner thereof is required to protect, support, maintain, or restore), repairing the same if damaged, and restoring to their original condition all areas disturbed. The Contractor shall do all extra and additional work and bear all losses due to the nature of the work, costs incidental to suspension, or discontinuance of the work and take all risks of whatever nature.

WORK, MATERIALS, SPECIFICATIONS AND DRAWINGS: The Contract Drawings show in general and in detail the character of the work. If necessary, supplementary working drawings will be provided by the Engineer as the work progresses. The Contractor shall proceed with the work as shown on the Contract Drawings, except where portions of the work may be affected by the working drawings.

No work affected by the working drawings shall be done if the revisions occasioned thereby require an adjustment in the prices bid, until a written authorization has been reached and the Contractor has received written authorization from the Engineer to proceed with the work

All figures and dimensions on the Contract Drawings and supplementary working drawings shall be carefully checked by the Contractor, who shall note all discrepancies. The Contractor will be held responsible for any errors not discovered before the work has been executed. In the event errors are found, they shall be immediately reported to the Engineer who will instruct the Contractor as to the method of correcting them. The Contractor shall not alter specifications, drawings or

figures, nor make any alterations in the quantity, character or arrangements of the material or work, whether they shall involve additional expense or not, unless the same shall be agreed upon first in writing, as provided for herein.

This provision, however, shall not abridge in any way the Engineer's rights as to the interpretation of the Specifications, plans and figures thereon. The plans and Specifications are complementary and what is called for by either shall be as binding as if called for by both. In all cases, figures, dimensions, and the larger scale details shall take precedence over smaller scale drawings. Wherever the quality of material or work called for on the plans does not agree with that called for in the Specifications, the better of the two materials or work shall be supplied.

NECESSARY AND ESSENTIAL WORK DEEMED INCLUDED: In case any work or material shall be required to be done or furnished in or for the more perfect performance of the work herein contemplated, which are not specifically mentioned, specified or indicated on the Contract Drawings or in the Specifications and other parts of this contract and which in the opinion of the Engineer are necessary and essential to a complete performance of this contract, the same shall be deemed included within the requirements of this contract and the Specifications and Contract Drawings. The Contractor hereby specifically promises, covenants, and agrees to do and perform any and all such work and supply any and all such materials the same as if herein or therein specifically enumerated.

PURPORT OF ESTIMATES AND SCHEDULES: All schedules are given for the convenience of the Engineer and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of size, kind and quality of materials and equipment included in the work to be done under this contract.

CONFLICTS: If in the opinion of the Engineer, the Contract Drawings and/or the Specifications are in conflict with either the Contract Drawings and/or the Specifications; or if both the Contract Drawings and the Specifications are not clear as to: the method of performing any part of the work, or as to the types or quantity of material or equipment necessary, in every such situation the Contractor shall be deemed to have based his bid upon performing the work and furnishing materials or equipment in the manner most expensive and costly to the Contractor. If such conflict and/or ambiguities arise, the Parks Department will furnish and supply the Contractor with supplementary drawings showing the manner in which the work shall be performed and the type(s) of materials or equipment that shall be installed.

ARTICLE 2: PROVISIONS REFERENCED WITH PROPOSAL FOR BIDS AND AGREEMENT:

EXCISE AND TRANSPORTATION TAX: Pursuant to Section 4a of the

"Proposal for Bids," the Contractor may be exempted for the payment of Federal Excise and Transportation Taxes in accordance with the following:

1. Excise Tax Exemption Certificates will be certified by the Department of Parks, where requested by the Contractor, for items which fall within the scope of the contract and may be exempt from Federal Excise Tax.

2. The Contractor shall, in order to obtain exemption from the 3% Federal Transportation Tax, notify all suppliers that shipping papers be worded as follows: "To the City of New York, consigneer c/o A.B., Contractor." No certificate of exemption is required.

SALES AND COMPENSATION USE TAXES: The Contractor shall comply with and obtain the exemption provided by Section 1115 (a) (15) of the New York State Tax Law, as added by Laws of 1969, Chapter 473, from New York State Tax and Compensating Use Tax, for the purchase of materials required by this contract, except materials consumed by the contractor in the performance thereof. The contractor, when bidding, should not include an amount to cover such New York State or New York City taxes.

A) The City of New York (City) is exempt from payment of Federal, State, local taxes and Sales Compensating Use Taxes of the State of New York and of cities and counties on all materials and supplies sold to the City pursuant to the provisions of this contract. These taxes are not to be included in bids.

However, this exemption does not apply to tools, machinery, equipment, or other property leased by or to the Contractor or a Subcontractor, or to supplies and materials which, even though they are consumed, are not incorporated into the completed work (consumable supplies). The Contractor and Subcontractor(s) shall be responsible for and pay any and all applicable taxes, including Sales and Compensating Use Taxes, on such leased tools, machinery, equipment or other property and upon all such unincorporated supplies and materials.

B) The Contractor agrees to sell and the City agrees to purchase all supplies (other than consumable supplies) and materials required, necessary, or proper for or incidental to the construction of the Project covered by this Agreement. The sum paid under this Agreement for such supplies and materials shall be in full payment and consideration for the sale of such supplies and materials under this Agreement.

The Contractor agrees to construct the Project and to perform all work, labor and services required, necessary or proper for or incidental thereto for the sum shown in the bid for the performance of such work, labor and services; and the sum so paid pursuant to this Agreement for such work, labor, etc. shall be in full consideration for

the performance by the Contractor of all duties and obligations under this agreement in connection with said work and labor.

C) The purchase by the Contractor of the supplies and material sold hereunder shall be a purchase or procurement for resale and therefor not subject to the New York City Sales or Compensating Use Taxes or any such taxes of cities or counties. The sale of such supplies and materials by the Contractor to the City is exempt from the aforesaid sales or compensating use taxes.

With respect to such supplies and materials, the Contractor, at the request of the City, will furnish to the City such bills of sale and other instruments as may be required by it, properly executed, acknowledged and delivered assuring to the City title to such supplies and materials, free of liens or encumbrances, and the Contractor shall mark or otherwise identify all such materials as the property of the City.

D) Title to all materials to be sold by the Contractor to the City, pursuant to the provisions of the Contract, shall immediately vest in and become the sole property of the City upon delivery of such supplies and materials to the site and prior to its becoming a part of the permanent structure. Notwithstanding such transfer of title, the Contractor shall have the full and continuing responsibility to install such materials and supplies in accordance with the provisions of this Agreement, protect them, maintain them in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional materials in place of any that may be lost, stolen or rendered unusable, without cost to the City, until such time as the work covered by the Contract is fully accepted by the City. Such transfer of title shall in no way affect any of the Contractor's obligations hereunder. In the event that, after title has passed to the City, any of such supplies and materials are rejected as defective or otherwise unsatisfactory, title to all such supplies and materials shall be deemed to have been transferred back to the Contractor.

E) The purchase by Subcontractors of supplies and materials to be sold hereunder shall also be a purchase or procurement for resale to the Contractor (either directly or through other Subcontractors) and therefore are not subject to the aforesaid Sales or Compensating Use Taxes, provided that the subcontract agreements provide for the resale of such supplies and materials prior to and separate and apart from the incorporation of such supplies and materials into the permanent construction; and that such Subcontract Agreements are in a form similar to this Contract with respect to the separation of the sale of materials from the work and labor, services, consumable supplies and any other matters to be provided; and provided further that the Subcontract Agreements provide separate prices for materials and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for supplies and materials from the payments

for supplies and materials from the payments for other work and labor and other things to be provided.

F) The Contractor and his Subcontractor and material suppliers shall obtain any and all necessary Contractor Exempt Purchase Certificates or resale certificates from the appropriate governmental agency or agencies, and furnish a Contractor Exempt Purchase Certificate or resale certificate to all persons, firms or corporations from which they purchase supplies and materials for the performance of the work covered by this Contract.

GENERAL SPECIFICATIONS - GENERAL CONDITIONS

1a. Worker's Compensation Insurance: Before performing any work on the Contract, the Contractor shall procure Worker's Compensation Insurance in accord with the Laws of the State of New York on behalf of all employees who are to provide a service under this contract. Two certificates of such Insurance or authority for self-insurance shall be furnished to the Commissioner.

1b. Employers Liability Insurance Before performing any work on the Contract, the Contractor shall procure Employees Liability Insurance affording Compensation because of bodily injury by accident or disease sustained by any employee of the insured arising out of and in the course of his or her employment by the insured. Two certificates of insurance or authority for self-insurance shall be furnished to the Commissioner.

Certificates confirming renewals of insurance shall be presented not less than 30 days prior to the expiration date of coverage until all operations under this contract are deemed completed.

2. Commercial General Liability: Before commencing work at the sites, the Contractor shall procure a commercial general liability insurance policy in the Contractor's name which designates the City of New York Department of Parks and Recreation (DPR) as additional insureds and endorsed to cover liability assumed by the Contractor under the indemnity provisions of this agreement. This insurance policy must be maintained during the life of the Contract and shall protect the City, DPR, and the Contractor and Subcontractors performing work at the site from claims for property damage and/or bodily injury which may arise from operations under this contract, whether such operations by the Contractor or any employee (direct or indirect). Two (2) certificates of insurance shall be furnished in a manner acceptable to DPR, together with copies of all endorsements pertaining to the requirements of this contract. Limits above are as provided in CG 00 01 (ED 10/93). The policy shall contain no exclusions or endorsements which are not acceptable to the City and shall be of a form and by an insurance company acceptable to the City.

The Contractor shall have the option to carry "Comprehensive General Liability Insurance" with a limit per accident equal to the amount required in Schedule "A" in lieu of the Commercial General Liability Insurance described above.

The following endorsements are required to be made on General Libility Insurance Policies:

a. Notice under the Policy of the insured shall be addressed to the City of New York Department of Parks and Recreation, Olmsted Center, Flushing Meadows-Corona Park, Flushing, N.Y. 11368.

b. Notice of Accident shall be given by the Insured within One Hundred and Twenty (120) days after notice has been sent to the Commissioner of such accidents.

c. Notice of Claim shall be given to the Company within One Hundred Twenty (120) days after such notice shall be filed with the Comptroller of the City of New York.

d. Notice of Cancellation of Policy: The policy shall not be canceled, terminated, modified or changed by the Company unless the thirty (30) days prior written notice is sent to the Insured by Registered Mail and also sent to the Commissioner nor shall the policy be canceled, terminated, modified or changed by the insured without the prior consent of the Commissioner.

3. Professional Liability: -CNA DESIGN PROFESSIONAL - 1-----87503-A (ed. 8/83), or equivalent. Covering as insured the Contractors Engineer(s).

Contractor's Engineer shall indemnify and hold harmless the Commissioner and the City and each officer, agent and employee of the City or DPR against claims against any of them, for personal injury or wrongful death or property damage arising out of the negligent performance of professional services or caused by an error, omission or negligent act of the Contractor's Engineer or anyone employed by the Contractor's Engineer.

All sub-consultants to the Contractor's Engineer providing professional service under this contract shall also provide evidence of professional liability insurance to the Department's Risk Manager at limits appropriate to sub-consultant and through carriers and on forms acceptable to DPR.

4. Automobile Liability - Contractors will provide the City with evidence of insurance covering all owned, non-owned, and hired vehicles to be used in connection with this contract.

5. Builders Risk - Before any materials are purchase under this contract, the contractor shall present DPR with certificates evidencing that the required insurance

is in effect. The policy shall insure the City and the Contractor as their respective rights may appear under the contract. The policy shall provide for storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project.

Builders Risk Policy shall contain the following endorsements:

a ."This policy insures against loss or damage only on work done under Contract No. _____ with the City in Construction for DPR (PROJECT DESCRIPTION } ____which is susceptible to damage or loss."

b. "The policy must contain under the loss payable clause or by endorsement thereon, " loss, if any, payable to the City of New York."

The omission of any of these endorsements or clauses from the policy will be considered a cause for rejection of the policy.

The policy will be stamped, PAID, or receipted bills of payment of the premium shall be delivered with the builders' risk insurance policy.

If the insurance policy is that of a mutual company, it shall contain the following: "The City of New York shall not be liable for any premium or assessment under this policy of insurance. The Contractor who has entered into the contract referred to in this policy with the City of New York is solely liable."

6. Insurance Agreement

A) The Contractor is required to obtain and maintain insurance as outlined in Schedule A, which includes any work performed during guarantee period.

B) The insurance required for this contract must be on forms acceptable to the DPR and offered by Insurers acceptable to the Department.

C) Where circumstances warrant, the Agency may, at its discretion subject to acceptance by the Law Department and/or the Office of the Comptroller, accept letters of credit or custodial accounts in lieu of specific insurance requirements.

D) The Contractor/Consultant agrees and all insurance contributing to satisfaction of Schedule A insurance requirements shall provide, that "the policy shall not be canceled, terminated or modified by the company unless thirty (30) days prior written notice (unless another period is specifically

given above) is given the City of New York Department of Parks and Recreation (DPR). Nor shall it be notified, terminated or canceled by the Contractor/Consultant without the prior written approval of DPR nor shall it be notified, terminated or canceled by the Contractor/Consultant without the prior written approval of DPR.

(E) The contractor shall be solely responsible for payment of all premiums and deductibles for insurance contributing to satisfaction of Schedule A requirements, whether or not the City of New York is an insured under the policy.

(F) Claims-made policies will be accepted for only professional liability and such other risks as are authorized by the New York State Insurance Department. All such policies contributing to satisfaction of Schedule A requirements shall have an extended reporting period option or automatic coverage if not less than two years. If provided as an option, the Contractor/Consultant agrees to purchase the extended reporting period on cancellation or termination unless a new policy is effected with a retroactive date, including at least the last policy year.

(G) The Contractor/Consultant shall promptly notify the DPR Office of Risk Management of any accidents arising in the course of operations under the contract causing bodily injury or property damage. Notice to the Company (carrier) by the Contractor of an accident or claim on the site shall constitute notice by the City to the Company.

(H) The Contractor or his Engineer may apply to DPR for approval of higher deductibles based on financial capacity and quality of the carrier affording coverage.

PROTECTION OF CITY PROPERTY: If City property is lost, damaged or destroyed as result of Contractor's or Subcontractors' operations in the performance of this contract due to failure to comply with any of the provisions of this contract or by law; the Contractor shall indemnify and hold the City harmless from any and all costs and expenses incurred.

ARTICLE 3 CONTRACT DRAWINGS AND SPECIFICATIONS:
For List of Drawings, see General Conditions, Section C, Special Provisions.

RELATED CONTRACTS: Where there are related contracts, the Contractor shall study the requirements of such related contracts and coordinate affected work with other Contractors.

DRAWINGS AND SPECIFICATIONS: FURNISHED TO CONTRACTOR: After the Contract has been executed, the Contractor will be furnished with four sets of paper prints of the Contract Drawings of his contract and four sets of Specifications of his contract. If there are related contracts, the Contractor will be furnished with two sets of drawings and Specifications of the related contracts. Additional copies of Contract Drawings and Specifications may be purchased by the Contractor at the cost of printing with no refund.

SUPPLEMENTARY DRAWINGS: When the Engineer decides to show more fully the work to be done or to show required changes or to rectify errors which may have been discovered, drawings to be known as supplementary drawings with Specifications appertaining thereto will be prepared by the Engineer and four paper prints thereof will be given to the Contractor. The supplementary drawings shall be as fully binding as the original Contract Drawings and if such supplementary drawings require either less or more than the estimated quantities of work, credit to the City or compensation therefor to the Contractor shall be subject to the terms of the agreement.

INFORMATION TO SUBCONTRACTORS, MANUFACTURERS AND OTHERS: The Contractor shall furnish complete information from the Contract documents, together with all necessary drawings and copies of these Specifications to Subcontractors, manufacturers and others performing work required under the contract.

CONTRACTOR TO CHECK DRAWINGS AND OTHER DATA: The Contractor shall verify all dimensions, quantities and details shown on plans, sketches, schedules or other data received from the Engineer, and shall notify the Engineer of all errors, omissions, conflicts and discrepancies found therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom nor from rectifying such conditions at his own expense. Figures shall be used in preference to scaled dimensions and large scale drawings in preference to small scaled drawings.

"DIRECTED," etc.: Whenever reference is made to the work or its performance, the terms "Directed," "Required," "Permitted," "Ordered," "Designated," "Prescribed," "Determined" and words of similar import shall imply the direction, requirement, permission, order, designation, prescription or determination of the Engineer.

"APPROVED," etc.: "Approved," "acceptable," "satisfactory" and words of similar import shall mean and intend approved, acceptable or satisfactory to the Engineer.

THE SPECIFICATIONS These Specifications consist of two parts, the General Specifications and Detailed Specifications.

DETAILED SPECIFICATIONS GOVERN: THE DETAILED Specifications MODIFY AND SUPPLEMENT THE GENERAL Specifications BY SPECIFIC PROVISIONS AND DETAILED REQUIREMENTS FOR THE CLASSIFIED CONTRACT ITEMS. THE DETAILED Specifications SHALL ALWAYS GOVERN WHENEVER THERE APPEARS TO BE A CONFLICT BETWEEN THE GENERAL AND THE DETAILED Specifications.

ARTICLE 4. CONTRACTOR'S WORKING DRAWINGS, DESIGN, SHOP AND RECORD DRAWINGS:

WHEN REQUIRED: A Contractor's working drawings, design drawings, shop drawings and record drawings shall be furnished when specifically called for in Section C, Special Conditions, in the Detailed Specifications or requested by the Engineer. Drawings shall be on standard size sheets of the same size and with the same margins, borders and title boxes as the contract drawings.

APPROVAL PROCEDURE, WORKING DRAWINGS: The procedure in seeking approval of working drawings, (except for electrical work which shall be in accordance with "Section D "), follows:

1. The Contractor shall submit to the Engineer three complete sets of prints of all working drawings.

2. When a working drawing is satisfactory to the Engineer, the prints will be stamped "Approved" by him, will be dated, and one copy thereof will be returned to the Contractor. The Contractor shall then insert the date of approval on the tracing and promptly furnish the Engineer with six prints of the working drawings as approved.

3. When the Engineer requires minor correction, the prints of the workings drawings will be stamped by him "Approved" with corrections noted, and one copy thereof will be returned to the Contractor. The Contractor shall then make the corrections indicated on the original tracing and also insert therein the date of approval. The Contractor shall promptly furnish the Engineer with six prints of the corrected or revised drawings with all corrections made as noted.

4. The prints of unsatisfactory working drawings will be stamped "Returned for Correction" and one copy thereof will be returned to the Contractor. Unsatisfactory work drawings shall with be corrected or redrawn by the Contractor and prints

thereof which shall be considered original submittals shall be offered for approval.

5 A print will be stamped "Approved " only once. Should the Contractor find it necessary to make changes on a drawing subsequent to approval, he shall resubmit two prints of the working drawing with his revisions noted thereon in a distinctive color. Approval of such proposed revisions by the Contractor will be by letter; the date of approval and the approved revisions shall be placed on the tracing by the contractor. Six prints of the working drawing showing such revisions shall be promptly furnished to the Engineer, the prints will be stamped "Returned for Correction" and the procedure shall be the same as outlined in "4" above.

APPROVALS GENERAL: Submittals to the Engineer shall contain complete data on the work and full information on related matters.

With submittals, the Contractor shall notify the Engineer of all departures from the Contract Drawings and Specifications; otherwise, approval of such submittals will not constitute approval of the departure. Approval of a drawing will constitute approval of the subject matter thereof only and not of any other structure, material or apparatus shown or indicated. Materials or equipment shall not be ordered nor shall any work be done by the Contractor before the materials, the equipment and the working drawings as herein required have been approved by the Engineer.

ARTICLE 5. MATERIALS AND EQUIPMENT

LOCAL LAWS: All materials, appliances and types or methods of construction shall be in accordance with the Specifications and shall in no event be less than that necessary to conform to the requirements of the Administrative Code and the Charter of the City of New York.

QUALITY OF MATERIALS AND EQUIPMENT: "All materials, fixtures, supplies and equipment furnished under the Contract shall be new and unused, except as approved by DPR or as specified, and of standard first-grade quality and of the best workmanship and design. The City of New York encourages use of recycled products where practicable."

APPROVAL OF MATERIALS AND MANUFACTURERS: The names of proposed manufacturers, materialmen and dealers who are to furnish materials, fixtures, equipment, applications or other fittings shall be submitted as early as possible to the Engineer for approval, to afford proper investigation and checking.

DEALINGS WITH MANUFACTURERS: All transactions with the manufacturers or Subcontractors shall be through the Contractor unless the Contractor requests in writing to the Engineer that the manufacturer or Subcontractor

deal directly with the Engineer. Any such transactions shall not in any way release the Contractor from his full responsibility under the Contract.

SIMILAR MATERIALS AND EQUIPMENT TO BE ALIKE: All materials and equipment of one and the same kind, type or classification and used for the identical purpose shall be made by the same manufacturer.

STANDARD REFERENCES: When reference is made to furnishing or testing of materials for conformance to the standards of any technical society, organization, or body; it shall be construed to mean the latest standard, code, specification, or tentative specification adopted and published which complies with the building laws of the City of New York.

USE OF ABBREVIATIONS: Reference to the technical society, organization or body may be made in the Specifications in accordance with the following lists:

ACI	for	American Concrete Institute
AGA	for	American Gas Association
AGMA	for	American Gear Manufacturers Association
AIEE	for	American Institute of Electrical Engineers
AISC	for	American Institute of Steel Construction
API	for	American Petroleum Institute
ASA	for	American Standards Association
ASCE	for	American Society of Civil Engineers
ASME	for	American Society of Mechanical Engineers
ASTM Des.	for	American Society for Testing Materials Designation
AWSC	for	American Welding Society Code
AWWA	for	American Water Works Association
BS&A	for	New York City Board of Standards & Appeals
CIPRA	for	Cast Iron Pipe Research Association
*D.C.A.S.	for	Dept. of Citywide Adminstrative Services (NYC)
D.E.P.	for	Dept. Of Environmental Protection (NYC).
FED. SPEC.	for	Federal Specifications
IPCEA	for	Insulated Power Cable Engineer's Association
NAVY Spec.	for	Navy Department Specification
N.E.C.	for	National Electric Code
N.E.M.A.	for	National Electrical Manufacturers Association
N.Y.B.C.	for	New York City Building Code
N.Y.E.C.	for	New York City Electrical Code
*N.Y. Spec.	for	New York City Dept. for Purchase Specifications
P.P.S	for	Power Piping Society
S.A.E.	for	Society of Automotive Engineers Standards

* These Specifications may be viewed or obtained free of charge at the Office of

Vendor Relations, Municipal Building, 1 Centre Street, 18th Floor, NY, NY
(212) 669-8562

MATERIALS: When no reference is made to a code, standard or specification, the standards of the A.S.T.M. or the A.I.E.E. shall govern. In all cases materials shall be of the quality and character which, in the opinion of the Engineer, are best suited for the purpose for which they are required.

SAMPLES OF MATERIALS: When required by the Engineer; typical samples of materials and appliances, properly identified by tags, shall be submitted in duplicate by the Contractor for approval by the Engineer. Samples shall be submitted sufficiently in advance of the time when they are to be used so that rejections thereof will not delay the approved construction schedules. Approved samples will be so labeled and dated. One approved sample will be sent to the Engineer's field office. The other approved sample will be retained in the Design Office for record purposes. Samples will be taken from various deliveries of materials to the work. Materials, when tested or analyzed, must posses qualities equal or superior to those required by the Specifications, otherwise they will be rejected.

SPECIFYING BY NAME: Whenever an article, material, apparatus, equipment or process 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, material, apparatus, equipment or process 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.

CERTIFICATION OR MEMBERSHIP: In these specifications, wherever certification by, or membership in, a nongovernmental entity or organization is required, this shall be deemed to mean such certification or membership or possession of equivalent qualifications or characteristics as determined by the Engineer, is required. The foregoing shall not be construed to be a waiver or any legally required Federal, State or local certification or licensing requirement, no shall it apply where certification by the manufacturer of materials or equipment called for.

USE OF PATENTED ARTICLES: Nothing on the Contract Drawings or in the Specifications shall be interpreted or taken to violate the provision of Section 348 of the New York City Charter. Section 348 provides that "Except for repairs no patented pavement shall be laid and no patented articles shall be advertised for, contracted for or purchased, except under such circumstances that there can be a fair and reasonable opportunity for the competition.

WRITTEN PERMISSION NECESSARY: Whenever the Contractor intends to furnish an article, material, apparatus, equipment, or process as similar or equal to that article, material, apparatus, equipment, or process specifically mentioned on the Contract Drawings or in the Specifications by the trade name or otherwise, the Contractor must first obtain the consent in writing of the Engineer.

SAMPLE QUANTITIES: The Contractor shall deliver materials in ample quantities to insure speedy or uninterrupted progress of the work in order to complete the work within the contract time.

COORDINATION: The Contractor shall coordinate deliveries in order to avoid delaying or impeding the progress of the work of any related contractor.

LAND FOR CONTRACTOR'S USE: The Engineer shall in all cases determine the portion of the site to be used by the Contractor for storage, plant, or other purposes.

NO INTERFERENCE: If it becomes necessary to remove and restack materials to avoid impeding the progress of any part of the work or to avoid interfering with the work to be done by any other Contractor, the Contractor shall remove and restack such materials at no additional cost to the City.

ENGINEER TO SELECT INSPECTORS: Except as specifically provided in the Specification, the Engineer will select and designate all persons, firms or corporations to make or witness all inspections, tests, or analyses, with or without reports.

The Contractor shall give notice in writing to the Engineer sufficiently in advance of his intention to commence the manufacture or preparation of special materials for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Engineer will either arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials; or the Engineer will notify the Contractor that the inspection will be made at a point other than the point of manufacture; or the Engineer will notify the Contractor that the inspection will be waived.

CERTIFICATES OF MANUFACTURE: When no direct test, inspection, or analysis of materials, products, or equipment is required at the point of manufacture; the Contractor shall furnish to the Engineer (when required)

authoritative evidence, in the form of Certificates of Manufacture, showing that the materials, products, or equipment to be used in the work have been manufactured and tested in conformity with the Specifications. These certificates shall include six (6) copies of the results of physical tests and chemical analysis (where necessary) that have been made directly on the product, or on similar products being fabricated by the manufacturer. The costs of furnishing Certificates of Manufacture and the results of tests or analysis shall be borne by the Contractor and shall be deemed to be included in the contract price.

When materials or manufactured products comprise such small quantities that it is not practicable to make physical tests or chemical analysis directly on the materials or products furnished, a certificate stating the results of such tests or analysis of similar materials or products which were concurrently produced may, at the discretion of the Engineer be considered as the basis for the acceptance of such materials or manufactured products.

NO SHIPPING BEFORE INSPECTION: The Contractor shall comply with the foregoing before shipping any material.

TESTING COMPLIANCE: The testing personnel shall make necessary inspections and tests. The reports thereof shall be in forms which facilitate checking for compliance with the Specifications and shall include all analysis and/or test data and the interpretations of results.

REPORTS: Six (6) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the Engineer as a prerequisite for the acceptance of any material or equipment.

REJECTIONS: If in the making of any test it is determined by the Engineer that material or equipment does not comply with the Contract, the Contractor will be notified and directed to refrain from delivering said material or equipment, or to promptly remove it from the site or from the work and replace it with acceptable material without cost to the City. Upon rejection of any material or equipment submitted as the equivalent of that specifically named in the contract, the Contractor shall immediately proceed to furnish the specifically named material or equipment.

COST OF TESTS BORNE BY CITY: Where the City makes tests to determine compliance with the contract regarding materials or equipment and where such compliance is ascertained as a result thereof, the City will bear the cost of such tests.

COST BORNE BY CONTRACTOR: Where tests or analyses are specifically called for in the contract , the cost thereof shall be borne by the Contractor anfd shall be be deemed to be included in the contract price. The Contractor shall reinburse the City for expenditures incurred in the making of tests on materials and equipment submitted by the Contractor as the equivalent of that specifically named in the contract and rejected for noncompliance.

MEASUREMENT OF WORK AND MATERIALS: All quantities of work and materials paid for shall be measured and determined by the Engineer and his assistants, according to the working lines that they may be given and the Specifications, when the work comes up to such lines. No allowance will be made for any excess above quantities required by such lines and Specifications on any part of the work. Should the dimensions of any part of the work or of the materials be less than those required by the direction of the Engineer, the actual quantities only will be allowed in measurement.

USE OF PLANIMETER: The planimeter shall be considered an instrument of precision in measuring areas.

ARTICLE 6. TEMPORARY STRUCTURES

CONTRACTOR'S FIELD OFFICE: When directed by the Engineer, the Contractor shall furnish and maintain an office at the site of the work during the entire period of construction at which the Contractor, or an authorized agent, shall be present at all times while his work is in progress. Readily accessible copies of both the Contract Documents and the latest approved working drawings shall be kept at the field office of the Contractor.

PRIVATE PROPERTY : When the Contractor temporarily occupies property adjacent to the work,The Contractorshall provide the Engineer with certified copies of agreements which permit the use of such land.

OBSTRUCTION ACCESS: The Contractor shall not obstruct any highway in the vicinity of the site of the work or access thereto from private property. The necessary facilities and safeguards to comply with these requirements shall be provided and maintained at the expense of the Contractor.

TRESPASSING PROHIBITED: All employees and Subcontractors of the Contractor are prohibited from trespassing on private or public property except where the law permits, such entrance for the purpose of underpinning or otherwise protecting adjoining structures. The Contractor shall give ample notice to the

owners and users of all such structures before disturbing or using them.

ARTICLE 7. TEMPORARY SERVICES

WATER: The Contractor shall provide the necessary water supply for the work at his own expense.

TEMPORARY LIGHTS AND POWER: Where necessary the Contractor shall provide, at his own expense, suitable power facilities and the temporary lighting required for the proper prosecution of the work. If in the opinion of the Engineer these facilities are inadequate, the contractor will not be permitted to proceed with any portion of the work affected thereby.

SANITARY REGULATIONS: The Contractor shall prohibit and prevent the committing of nuisances on the site of the work or on adjoining property and shall discharge any employee who violates this rule.

Ample washroom and toilet facilities and a drinking water supply shall be furnished and maintained where necessary in strict conformity with the law.

ARTICLE 8. SURVEYS

LINE AND GRADE: The entire work must be constructed to exact position and evaluation. The Contractor will be given line and grade at various intervals throughout the work; but, unless otherwise stated in Section C, the Contractor must provide personnel and instruments for determining alignment, elevation, and position for all construction between such points, subject to the check and correction of the Engineer. The Contractor shall keep the Engineer informed a reasonable time in advance of the time and place of work, in order that line and grade may be furnished and necessary measurements made for record and payment with the least inconvenience to the Engineer and delay to the Contractor. The Contractor shall provide, at his own expense, stakes and such other material as required by the Engineer for staking out the work. Any change in the stakes and marks caused by the development of construction shall not be made the basis of claims for payment other than as provided for in this contract.

PRESERVATION OF STAKES, ETC. : The Contractor shall be held responsible for the preservation of all stakes and marks. If in the opinion of the Engineer any survey or construction stakes or marks have carelessly or willfully been destroyed or disturbed by the Contractor, the cost of replacing them shall be charged against the Contractor and will be deducted from the payment for his work.

PERMIT TO DISTURB MONUMENTS: The Contractor shall not excavate within five (5) feet of such City monuments, bolts or bench marks, or monuments of other government agencies as may come within the limits or be disturbed by the work herein contemplated, or in any manner disturb them, but shall cease work at such locations, until the said monuments or marks have been referenced or reset or otherwise disposed of, except upon a special permit from the President of the Borough in which the project is located or other governmental agency concerned.

PROPERTY LINE SURVEY: On sites which abut private property, the Contractor shall hire a licensed New York Land Surveyor to stake out the property lines, improvements and encroachments on a site. The Contractor shall submit a drawing and a report to the Engineer depicting the work done. The cost thereof shall be borne by the Contractor and shall be deemed included in the Contract price.

ARTICLE 9. SLEEVES AND HANGERS:

INSTALLING CONDUITS, SLEEVES, INSERTS AND SIMILAR APPURTENANCES: When the contract requires the placing of conduits, saddles, boxes, cabinets, sleeves, inserts, foundation bolts, anchors and other similar work in floors or walls of buildings and structures; they shall be promptly installed in conformity with the construction program. The Contractor who erects the floors and walls shall facilitate such work by fully cooperating with the Contractors responsible for installing such appurtenances. The Contractor responsible for installing such work shall arrange the work in strict conformity with the approved construction schedule and avoid interferences with the work of other contractors. When the manners in which such work are performed causes delay, or when such appurtenances are not installed on time, construction shall proceed as scheduled and all cutting and restoration resulting from such conditions shall be at the expense of the installing contractor.

ARTICLE 10 CUTTING AND PATCHING

CUTTING AND RESTORATION When it becomes necessary to cut existing work, the location and size of cut and method of cutting shall be as approved by the Engineer. Work adjacent to cutting shall not be unnecessarily damaged. On completion of the cutting, all affected areas shall be restored satisfactorily by skilled workmen.

ARTICLE 11 MAINTENANCE OF TRAFFIC:

MAINTENANCE AND PROTECTION: The Contractor must so conduct his operations as to interfere to the least extent practicable with the passage of vehicles, pedestrians, and all other kinds of public traffic. The Contractor must take every precaution against accidents happening to such vehicles, pedestrians and other traffic because of his operations.

Payment for labor and materials, watchmen, lights, and any additional cost due to maintaining traffic on account of the Contractor's operation throughout the work shall be included in the various bid prices named in the contract.

ARTICLE 12. PRESERVING NATURAL FEATURES

PROTECTION: On lands owned by the Department or others adjacent to the work, the Contractor shall protect trees and shrubbery from being cut, trimmed, or injured, except such as are ordered by the Engineer to be removed for cleaning the site of the work. The Contractor shall prevent employees from tramping in shrubbery, and horses or vehicles from being driven through wooded lands. The Contractor shall protect trees adjacent to the work with plank wells, if necessary.

ARTICLE 13. RESTORATION

RESTORING PAVEMENTS, ETC.: All roadway and walk pavements, sodded and planted areas, structures and substructures not specifically provided for in the Engineer's estimate, which are disturbed by the Contractor during the prosecution of the work, shall be carefully protected and restored in a manner satisfactory to the Engineer to their original conditions by the Contractor without additional compensation.

The Contractor shall do all work necessary to connect the new construction to existing construction.

RESTORATION REQUIRED FOR LOCAL STREETS: For street openings the restoration shall consist of either 3" Asphaltic concrete on 6" concrete base; or 3" sheets asphalt on a 6" concrete base. Use whichever type most nearly matches the existing pavement.

Details of pavement restoration shall be in accordance with the standard specification of the New York City Department of Highways.

ARTICLE 14. PROFESSIONAL ENGINEER:

Where the services of a Professional Engineer are requested elsewhere in these Specifications, said Professional Engineer cannot be the Contractor, any officer or member of his firm, a relative of any officer or member of the firm or any person who has been a member of the firm during the past year of the date of an award of this contract.

SECTION B: MATERIALS AND METHODS OF CONSTRUCTION

ARTICLE 1. GENERAL REQUIREMENTS: All materials proposed to be used in construction shall have due examination and be subjected to the required tests before acceptance. Those which are to be tested by the Laboratory shall have samples taken and submitted in accordance with the Engineer's instructions. Samples are to be taken of all sand, gravel, stone, cement, concrete, bars, steel fabric, bituminous material or other materials used in construction when the Engineer in charge has not been notified that such samples have already been taken. Such materials shall be tested by the Laboratory and no materials of which laboratory tests are required shall be used, unless otherwise directed, until the Engineer has received written notification of acceptance, and then only so long as its quality remains equal to that of the accepted sample. The Contractor shall furnish all samples, shall bear all expense in connection with their sampling and transportation, and shall furnish all facilities and labor required in connection with their testing.

The acceptance at any time of any materials shall not be a bar to its' future rejection if subsequently found to be defective or inferior in quality or uniformity to the material specified. Contractors shall furnish to companies from whom they purchase materials, which are inspected at manufacturing plants, the contract number and destination for each shipment of material so ordered. If any part of the contract is sublet, the sub-contractor shall also conform to the foregoing requirements.

Any materials which have been plant inspected and accepted by the Engineer shall not be shipped to other work under another Contract unless so authorized by the Engineer.

Materials which have been rejected based upon the results of Laboratory tests will not be resampled or retested except as provided for in the Specifications for any particular material, unless otherwise directed by the Engineer.

Weight shall be used in all cases for percentage determination on all solid material.

Any material may be rejected if, in the opinion of the Engineer, service records indicated that it is unsound or otherwise unsatisfactory.

The results obtained in the test of any materials for concrete may be compared with the records of

similar materials in actual service and when such service record is unsatisfactory, as determined by the Engineer, the use of the material will not be allowed even though the tests are satisfactory.

ARTICLE 2. AGGREGATES: The term "aggregate" shall mean inert material which is mixed with cement and water to produce concrete, consisting in general of sand, pebbles, gravel, cinders, crushed stones, blast furnace slag, burnt shale or clay, or similar materials.

Concrete aggregates shall conform to "Standard Specification for Concrete Aggregates," A.S.T.M. C33, or to "Standard Specification for Lightweight Aggregates for Structural Concrete," of A.S.T.M. C330; lightweight aggregate shall be approved by the Board of Standards and Appeals. The size of the aggregate shall be at most one-fifth of the narrowest dimension between forms of the member for which the concrete is to be used, three-fourths of the minimum clear spacing between reinforcing bars.

All sources of aggregate shall be thoroughly stripped of all inferior and objectionable material before operations are started and shall be kept stripped far enough from the working face to insure against undesirable material becoming mixed with output.

Aggregate stock piles shall be located at points approved by the Engineer and so arranged that the fine and coarse aggregates or coarse aggregates separated by the specification requirements do not become mixed. The Contractor shall provide either approved platforms or prepared bases satisfactory to the Engineer; or at least 6 inches of the base stock pile material shall be left undisturbed until the completion of the pavement and structures. Materials from different sources of supply shall not be stored in the same stock pile unless approved by the Engineer.

Aggregates shall be delivered to the mixer in the batch boxes or trucks with the compartments of sufficient capacity to carry individual batches so there will be no loss or overrun of concrete materials either during transit or during the operation of dumping batches at the mixer. Truck bodies or batch boxes used to transport cement shall be equipped with waterproof tarpaulins for protection against rain and wind. Railroad cars, barges, etc., used for the transportation of materials shall be clear when any materials are deposited therein.

If undesirable material is furnished from acceptable sources of supply through faulty operation or any other cause whatsoever, all material from the source of supply may be rejected by the Engineer.

Representative samples of both fine and coarse aggregate shall be taken and sent by the representative of the Engineer to the Laboratory unless materials from the same source of supply have been tested and approved during the year preceding the award of the Contract except that local stone need not be resampled if the supply has not been worked and the test is not more than three years old; and except that local sand and gravel need not be resampled if the supply has not been worked and the test is not more than two years old.

If, after approval, the character of the material changes it shall be subjected to further test for approval or rejection.

If, after trial, it is found that partly developed quarries, ledges, pits, banks or other sources of supply do not furnish a uniform product, or if for any reason, the product from any source, at any time, proves to be unsatisfactory to the Engineer, said Engineer may require the Contractor to furnish acceptable material from other sources of supply, and the Contractor shall have no claim for increased payment on account of such requirements.

Whenever any specifications or methods of test are stipulated in these Specifications the same shall mean that specification or method of test given by the serial designation mentioned or the bulletin referred to.

When a sieve number is mentioned in these Specifications the same is to comply with the Tyler Standard Screen Scale Sieves as to size of sieve opening.

ARTICLE 3. PORTLAND CEMENT: All Portland Cement shall be sampled at the mill by a representative of the Engineer.

Portland Cement shall be tested according to approved methods of tests and shall conform to "Standard Specifications for Portland Cement" of A.S.T.M. Designation: C 150, where not otherwise modified by these specifications and except that test samples for cement taken from cars, bins or warehouses shall represent amounts to be determined by the Laboratory. Samples of each lot shall be required to show practically uniform results in tests; marked deviation from such results may be considered cause for rejection, even though test requirements may be otherwise fulfilled.

Compound percentages shall be computed to the nearest one-tenth of one per cent and reported to

the nearest one percent.

Cement may be accepted on the results of the seven-day tests provided these tests are satisfactory. Cement not satisfactory in the seven-day tests may be held awaiting the results of twenty-eight day tests before acceptance or rejection. The Engineer, however, reserves the right to reject any cement that fails to meet the requirements of the twenty-eight-day tests, even though it had been previously accepted on the seven-day tests. The cement shall be delivered in suitable bags of an approved type with the brand and the name of the manufacturer plainly marked thereon. A bag shall contain 94 pounds net. A barrel shall contain 376 pounds net. One bag of cement shall be considered as containing 1 cubic foot.

Bulk cement may be used providing it is batched by an approved weighing device meeting the following requirements:

The weighing hopper and scale entirely encased and arrangement made for locking.

The discharge chute shall be so arranged that cement will not lodge therein and so that there will be no loss of cement.

The hopper inlet mechanism shall be interlocked against opening when the discharge gate is open.

The hopper discharge mechanism shall be inter-locked against opening until the full batch is in the hopper scales, balanced against opening while hopper is being filled, against closing until hopper is entirely discharged and scales back is balance, and against opening if batch in hopper is either over or under weight by more than one per cent of the amount specified.

The weighing hopper discharge gate shall be operated by electrical mechanism. The weighing hopper discharge chute shall be suspended from the encasement and not from the weighing hopper.

Shipment or transportation of cement in cloth bags will not be permitted.

Provision shall be made by the Contractor for storing cement, in a dry place and in such a manner

as to permit easy access for proper inspection and identification of each shipment. The use of cement of a temperature in excess of 140^0 F will not be permitted.

All cement stored over winter by the Contractor shall not be used until retested by the Laboratory. All accepted cement held in storage more than six months at mills, plants, storage sheds, etc., shall be resampled and retested before use. However, accepted cement which has been in storage more than one (1) year from the time of original sampling shall not be used.

Cement failing to meet the requirements of the Specifications shall be neither resampled nor retested, except as provided for in the Standard Specifications of the American Society for Testing Materials.

ARTICLE 4. FINE AGGREGATE FOR CONCRETE: Fine aggregate shall consist of sand, ore or garnet tailings, stone screenings (except limestone screenings) or a mixture of these, which shall conform to the following requirements and sieve analysis when dry.

Fine aggregate for concrete shall consist of grains or particles of hard and durable rocks, the surfaces of which are not coated with any injurious material. Any fine aggregate may be rejected if, in the opinion of the Engineer, it contains sufficient deleterious or unsound material to be harmful.

Natural or concrete sand shall be so graded that, when dry, 100 per cent shall pass 1/4-inch sieve, 90 to 100 per cent shall pass a No.4 sieve; 50 to 85 per cent shall pass a No.16 sieve; 10 to 30 per cent shall pass a No.50 sieve, and 2 to 10 per cent shall pass a No.100 sieve.

Stone screenings, ore or garnet tailings shall be so graded that when dry, 100 per cent shall pass a 1/4 -inch sieve; 90 to 100 per cent shall pass a No.4 sieve; 55 to 85 per cent shall pass a No. 16 sieve; 15 to 30 per cent shall pass a No. 50 sieve, and not more than 10 percent shall pass a No. 100 sieve. When subjected to ten (10) alternations of the sodium sulphate solution and soundness test, it shall lose not more than ten (10) per cent by weight.

All natural sand shall be thoroughly washed before using. All washed fine aggregate shall be stored in stock piles for a period of at least twelve (12) hours before batching. No new aggregate shall be added to any stock pile while materials from that pile is being batched.

Fine aggregate shall be rejected if it contains more than two (2%) per cent by weight of four (4%)

per cent by volume of loam and slit.

Fine aggregate shall be tested for Mortar-Making properties as described in the standard method of test for Measuring Mortar-Making Properties of Fine Aggregate, A.A.S.H.O. Designation T71.

Fine aggregate for masonry mortar shall consist of natural sand or manufactured sand and shall meet the requirements of the Standard Specification for Aggregate for Masonry Mortar of A.S.T.M. Designation:C 144.

Samples tested during the progress of the work may be accepted on the basis of the seven-day test. The Engineer, however, reserves the right to rescind such acceptance if mortar fails on the 28-day test.

All proportioning tables for fine aggregate have been increased by three (3) per cent to take care of average moisture conditions.

ARTICLE 5. MORTAR SAND: The requirements for Fine Aggregate for Concrete shall apply except as herein modified. When dry, 100 percent shall pass a No. 4 sieve, 95-100 per cent shall pass a No. 8 sieve, 10-35 per cent a No. 50 sieve and 2-15 per cent a No. 100 sieve. Sand shall be rejected if it contains more than 2% by weight or 4% by volume of loam and slit.

ARTICLE 6. GROUT SAND: Grout sand shall consists of clean, hard, durable, uncoated stone particles free from lumps of clay and all deleterious substances.

Grout sand shall be of such a size that when dry 100 per cent shall pass a No. 16 sieve and 0-10 per cent by weight shall pass a No. 100 sieve.

Sand may be rejected for this class if it contains more than 6 per cent by volume of loam and slit. When the sand is mixed with Portland Cement in the proportions of 1 part of cement to 3 parts of sand, the resulting mortar shall have a compressive strength of at least 60 per cent of that developed in the same time by a mortar of the same proportion and consistency made of the same cement and standard Ottawa sand.

ARTICLE 7.CUSHION SAND: Cushion sand shall consist of clean, hard, durable, uncoated stone particles free from lumps of clay and all deleterious substances.

Cushion sand shall be so graded that when dry, 100 per cent shall pass a one quarter (1/4) inch square opening sieve; and 0- 35 per cent by weight shall pass a No. 50 sieve, and 0- 10 per cent by weight shall pass a No. 100 sieve.

Sand may be rejected for this category if it contains more than ten (10) per cent by weight of loam and slit.

ARTICLE 8. COARSE AGGREGATE: Coarse aggregate shall consist of well graded, uniformly mixed broken stone, crushed gravel, screened gravel, or broken slag, and shall meet the requirements given for these materials. Broken slag or screened gravel shall not be used as coarse aggregate in any item unless it is so noted on the plans or in the itemized proposal. The coarse aggregate for concrete in reinforced concrete piles and in slabs, curbs, beams, steel encasement, arches, roadway pavement and frames shall be broken stone. The Contractor may use either gravel or broken stone for other concrete.

If deliveries of coarse aggregate show segregation of sizes, material shall be deposited in stock piles and mixed before using.

Coarse aggregate shall be graded within the ranges shown to produce maximum density.

Coarse aggregate coated with or containing mud, clay, dirt, stone dust, quicksand, or other objectionable material, shall be washed to the satisfaction of the Engineer. Run of bank gravel,a.k.a. "Bank run" shall not be permitted for concrete aggregate.

Coarse aggregate for concrete in which the maximum size aggregate is limited to No. 2 size shall consist of a mixture of No. 1 and No. 2 size particles, providing that no more than 50 percent or less than 30 percent shall be of No. 1 size and not more than 70 percent or less than 50 percent shall be of No. 2 size.

Stone or crushed gravel coarse aggregate for other concrete shall consist of a mixture of No. 1, No. 2 and No. 3- a size particles, 50 to 60 percent of which shall be of No. 3-a size, 40 to 50 percent of which shall be combined No. 1 and No. 2 sizes at least 40 percent of these combined No.1 and No. 2 sizes shall be of No.1 size particles. The combined No. 1 and No. 2 sizes shall be stored and batched separately except that separate delivery and stocking of the coarse aggregate will not be necessary where weight batching is not required.

Where stone is produced locally the crusher bins shall be so arranged that the No.1 and No.2 size particles are collected in the same bin.

Gravel coarse aggregate for other concrete shall consist of a mixture of No.1, No.2 and No.3 size particles, not more than 40 percent of which shall be of No.3 size, 60 to 100 percent of which shall be of No.3 size, 60 to 100 percent of which shall be combined No.1 and No.2 sizes of which not less than 40 percent nor more than 50 percent of these combined No.1 and No.2 sizes shall be of No.1 size particles. The combined No.1 and No.2 sizes shall be stored and batched separately except that separate delivery and stocking of the coarse aggregate will not be necessary where weight batching is not required.

When broken slag coarse aggregate is permitted, it shall meet the gradation requirements for coarse aggregate in which the maximum size is limited to 1 inch; and in items requiring weight batching it shall be adjusted in the field at the direction of the Engineer.

For slabs and structural concrete not exceeding one foot in thickness, for concrete deposited under water, and for concrete in pipe piles or concrete piles, the aggregate shall be limited to no larger than No.2 size.

The sizes of all stone, gravel, slag, etc., furnished locally or commercially and used under these Specifications shall be determined by its passing over the minimum and through the maximum square apertures for the various sizes tabulated as follows:

SIZES, OF STONE, GRAVEL AND SLAG

Percentage by Weight Passing the Following Square Openings (Sieve)

Sizes	4"	3-1/4"	2-1/4"	1-7/8"	1"	½"	1/4"	1/8"	No. 80
Screenings*						100	90-100		
IB							100	90-100	0-15
IA						100	90-100	0-15	
1					100	90-100	0-15		
2				100	90-100	0-15			
3A			100	90-100	0-15				
3		100	90-100		0-15				
4	100	90-100	0-15						
5	90-100	0-15							

*Screenings shall include all of the fine material passing a one quarter (1/4") inch screen.

If at any time during the progress of the work the sizes of the stone furnished prove unsatisfactory due to stone "carrying by", fracturing under the roller, etc., the Contractor shall vary the sizes of the screen apertures as directed by the Engineer.

All crushing plants installed on the work shall be fitted with a tailing chute so that no stone will reach the bins other than that which passes through the proper screen.

All stone, gravel or slag must be of the required size when placed in the roadway, and no breaking up of stone, gravel or slag by hammers or otherwise will be permitted after the stone, gravel or slag has been placed in the work.

Stone: The broken stone shall consist of clean, durable, sharp angled fragments of rock (including ore tailings) of uniform quality throughout, free from thin or elongated pieces, soft or disintegrated stone, dirt or other objectionable features. Samples shall be tested for abrasion in accordance Standard Test Methods for "Resistance to Degradation of Small-Size and Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine" of ASTM Designations C131 and C535

When subjected to ten (10) cycles of sodium sulphate solution and soundness test, as hereinafter specified, it shall lose not more than five (5) percent by weight.

Stone for coarse aggregate for concrete, for all top coarse macadam, and for all mixed bituminous pavements, shall have a percentage of wear of not more than five and seven tenths (5-7/10%).

Gravel hardheads retained on a four (4") inch square scalping screen and crushed will be accepted as stone coarse aggregate for all concrete items provided such hardheads shall meet the stone abrasion requirement and provided that the finished product shall meet the gradation requirements for broken stone.

Crushed gravel of No.1A, No.1B, No.1 and No. 2 sizes produced from No.4 and larger size acceptable gravel will be considered as crushed stone for use in all retread, mixed in place and mixing method bituminous pavements.

Crushed Gravel: Acceptable screened gravel which has 75 percent of particles fractured shall be considered as crushed gravel for coarse aggregate for concrete and shall meet the gradation

requirements for broken stone.

Gravel: Gravel shall consist of clean, sound, tough, hard stone, free from dirt, foreign matter, organic matter, coating or other deleterious matter and shall be washed if so directed.

Crushed gravel which contains more than 25 percent of unfractured particles shall be considered as screened gravel and shall meet all the requirements therefor. In making the abrasion determination only uncrushed particles shall be used.

Gravel for use in concrete work shall have a percent of wear of not more than 10 as determined by the Deval abrasion test for gravel in accordance with the Standard Specifications of the American Association of State Highway Officials, latest Method.

When subjected to 10 cycles of sodium sulphate solution and soundness test, as described under Materials of Construction, it shall lose not more than 5 percent by weight.

Slag: Broken slag, if specified for use, shall be hard and durable, composed of angular fragments reasonably uniform in density and quality, reasonably free from thin, elongated or glassy pieces, dirt or other objectionable matter.

Broken slag shall weigh not less than 70 pounds per cubic foot as determined by the Standard Test Method for "Unit Weight and Voids in Aggregate " for Concrete of the American Society for Testing Materials, Serial Designation C 29.
Slag for coarse aggregate for concrete and for all top coarse macadam shall have a percentage of wear of not more than 12 as determined by the Standard Method of Tests for "Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact". American Society for Testing Materials, Serial Designation C 535 using, however, a weight of 4000 gms. of slag, measured loose, broken in pieces as nearly uniform in size as possible, and containing as nearly 50 pieces as possible.

ARTICLE 9. SODIUM TESTS: Soundness of aggregate shall be determined by using American Society of Testing Materials, Serial Designation C-88 latest revision tests for Soundness of aggregate by use of Sodium Sulphate or Magnesium Sulphate.

ARTICLE 10. MAGNESIUM SULPHATE TESTS: The above test A.S.T.M. C-88 shall apply to these tests.

ARTICLE 11. WATER: Water for concrete shall be free from oil, acid, alkali, vegetable matter, organic matter or other deleterious substances.

ARTICLE 12. EXPANSION JOINT MATERIAL:

Premoulded Cork Expansion Joint: General: The premoulded cork joint shall be of the dimensions shown on the plans or in the Specifications. A tolerance of 1/8 of an inch in thickness will be permitted. All joints shall be cleanly cut and plainly stamped with the manufacturer's name.

Composition: Cork expansion joints shall be formed from clean cork particles compressed and bound together by a cementing material insoluble on water. The cork particles comprising the joint shall be present in their original state and shall not have been exposed in the process of manufacture to a high temperature.

Weight: The weight of the room dry cork expansion joint, computed on a cubic foot basis, shall not be more than 20 pounds.

Boiling Test: The expansion joint shall withstand boiling for one-half hour in distilled water without showing any indication of disintegration.

Compression Test: A sample of the room dry expansion joint, without encasement and not exceeding 1 inch in thickness, shall be compressed at room temperature at the rate of 0.1 inch per minute to one-half of its original thickness. Upon being reduced to 50 percent of its original thickness the pressure shall be released, following which the sample shall return to not less than 85 percent of its original thickness within one hour. The pressure necessary for compression shall not exceed 350 pounds per square inch. The expansion joint shall show no indication of disintegration after the compression test.

Bituminous Premoulded Fibre Joint:General: The bituminous premoulded joint shall be of the dimensions shown on the plans or in the Specifications and shall be of fibre and bituminous composition of approved quality. A tolerance of 1/16 of an inch thickness will be permitted. The joint shall be of such character that it will not be deformed by ordinary handling during the hot summer months or become hard and brittle in cold weather. Thin strips of stiffener will be allowed. All joints shall be plainly stamped with the name of the manufacturer.

Physical Properties: The joint shall consist of cane or other suitable long fibers of a cellular nature and asphalt. The asphalt in the joint shall have penetration of not more than 120 (77^0F.--100g.--5 sec.)

(a) Asphalt content: The asphalt content of the joint shall be between 35 and 50 percent by weight.

(b) Weight: The weight of the joint shall not exceed 40 lbs. per cubic foot.

(c) Absorption: When a specimen 2" x 6" cut from the joint material is immersed in water for 24 hours, it shall absorb not more than 15 per cent for 1 inch thick material, 20 per cent for 3/4 inch thick material, and 25 per cent for ½ inch and less thick material. All percentages are by weight.

(d) Brittleness: The bituminous premoulded joint shall not crack or shatter when subjected to the following tests: The sample to be tested, 2" x 6", is clamped between two boards so that the expansion joint cantilevers 3-1/2", same being held in any suitable support. A cast iron ball weighing 0.95 pound and having a diameter of 1.875 inches suspended by a cord which is tied to an eyelet soldered to the ball. For samples having a thickness of ½" and less, the ball is suspended one foot above the center of the projected portion of the specimen. For samples over ½" in thickness the ball is suspended 2 feet above the specimen. (The ball is released by burning the string above the eyelet.) The test is made on the sample after it has been maintained at a temperature of from 4^0 to 6^0 C. for at least 2 hours prior to testing.

(e) Distortion: The sample shall not show a deflection from horizontal of more than 1 inch subjected to the following test: The sample 2"x6" absolutely flat and straight is clamped between two blocks so that the expansion joint cantilevers 3.5 inches. The clamp, with the expansion joint, is then placed in an over 125^0 F and left therein for 2 hours.

(f) Deflection: A section of the joint (full size) cantilevered 3 feet shall not deflect more than 3 inches in 30 minutes at a temperature of 77^0 F.

(g) Extrusion: A section of the joint 6"x 6" confined on three sides when compressed to one-half original thickness by a lead so applied as to produce a compression of 0.10" per minute shall not extrude more than one quarter (1/4") after being compressed for one (1) hour. When compressed as above the material shall not lose more than 2% by weight of the original weight of the sample tested.

The Engineer reserves the right to require samples of any or all materials used in the manufacture of the joint.

Sealing Expansion Joints: Where called for on the plans or directed by the Engineer, expansion joints shall be sealed with expansion joint compound in accordance with the State Department of Transportation Specifications.

Elastic Cement: Elastic cement shall conform to the requirements of Federal Specification SS-C-153.

Caulking Compound for Structures: (a) Material: Caulking compound shall be an approved gray elastic compound complying with the following tests:
(b) Strain Test: The joint to be tested shall be made between two slabs of limestone eight (8) inches by ten (10) inches by one (1) inch, one of which shall have a hole in the center about (1) inch in diameter. The slabs shall be spaced one-quarter (1/4) inch apart by a strip of metal one-quarter (1/4) inch by one-eighth (1/8) inch in cross section, bent to form a square of six and one-half (6 ½) inches on each side. This spacer is laid concentrically on one slab and the other slab is then placed on top so that the long side of one slab is then placed on top so that the long side of one slab is parallel to the short side of the other. the slabs to be caulked are clamped on the spacer and the caulking compound is forced in at the four edges, giving a joint one-quarter (1/4) inch thick, three -quarters (3/4) inch deep and a perimeter of thirty-two (32) inches around the outer edge of the joint. The specimen shall be cured at room temperature
for thirty (30) days, after which the space between the slabs shall be filled with water through the hole in the center of the upper slab. The slabs shall be pulled apart by increments of approximately one-hundredth (.01) inch at ten (10) second intervals. The caulking compound shall stand a strain of at least five-hundredth (.05) inch before water starts to leak through the joint.

(c) Slump Test: A metal groove three-eighths (3/8) inch wide, three quarters (3/4) inch deep and four (4) inches long, shall be filled with caulking compound and placed in a vertical position for twenty-four (24) hours at room temperature and then transferred to an oven at fifty (50) degrees C. where it shall remain in a vertical position for twenty-four (24) hours. There shall be no appreciable slumping of the material under these conditions.

(d) Straining Test: A pat of caulking compound on limestone at room temperature shall show no

objectionable stain within a period of twenty (20) days.

(e) Application: Caulking Compound shall be applied with either a pneumatic or ratchet hand gun. All surfaces in contact with caulking compound shall be primed with clear lacquer or shellac.

Poured Joints: Poured joints shall be formed by placing a temporary joint, shaped to the section, of a type and material approved by the Engineer, which shall afterward be removed and the joint immediately filled with acceptable sealant or filler material. Temporary metal wedge shaped joints may be used having 1/16 inches less thickness than specified on the plans. Temporary wood joints will not be permitted.

The pouring shall be done by means of a device acceptable to the Engineer and the pouring shall be manipulated in such a manner that the acceptable sealant or filler material shall not be spread over the surface for a width of more than One (1) inch on either side of the joint and care shall be taken in order that the acceptable sealant or filler material shall not be spilled on the exposed surface of adjacent curbs and structures.

Temporary joints shall be held securely in place by means of pins driven two (2) feet apart.

ARTICLE 13. REINFORCEMENT FOR CEMENT CONCRETE:

Steel Bars: Reinforcing steel shall be of a quality and character meeting the requirements of the "Standard Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement" of the American Society for Testing Materials, Serial Designation A 615, except that stirrups shall be Structural Grade. Each and every bar shall be rolled with a letter denoting the mill of origin, which shall be acceptable to the Engineer. All steel shall be subjected to such tests as prescribed in the A.S.T.M. Specifications. In addition, the Contractor shall furnish additional proof, such as mill records, that the steel meets the requirements stated herein.

All bar reinforcement for concrete shall be of open-hearth steel, rolled from new billets. No re-rolled material or cold twisted bars will be accepted.

All bars shall be "deformed" bars unless otherwise specified. The term "deformed bar" shall mean a reinforcing bar conforming to "Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement" of A.S.T.M. Designation A615, Grade 60 and Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement of A.S.T.M.

Designation A767 .

Table Showing Weights and Sizes of Steel Bars

Bar No. or Size Specified	Standard Weight (Lbs. Per Foot)	Bar No. or Size Specified	Standard Weight (Lbs. Per Foot)
2	0.167	7	2.044
3	0.376	8	2.670
4	0.668	1" Square	3.400
1/2" Square	0.850	1-1/8" Square	4.303
5	1.043	10	4.303
6	1.502	1-1/4 Square	5.313

Steel Fabric: Steel Fabric reinforcement shall consist of longitudinal main members with transverse members at right angles thereto. All points of intersection of the members shall be firmly connected in an approved manner.

Steel fabric shall meet the requirements given for cold drawn steel wire for concrete reinforcement in the Standard Specification for "Steel Wire, Plain, for Concrete Reinforcement" of A.S.T.M. Designation:A 82-90a, except that samples shall be taken as directed by the Engineer.

All welded steel fabric shall meet the Standard Specification for "Steel Welded Wire Fabric, Plain, for Concrete Reinforcement" of the A.S.T.M. Designation A 185-90a.

ARTICLE 14. STRUCTURAL STEEL: All structural carbon steel, bolts, and steel billets shall conform to Standard Specification for "Structural Steel" of A.S.T.M. Designation: A 36-90, supplemented by the following paragraphs:

Test specimens of structural steel shall show a fracture having a silky or fine granular structure

throughout with a bluish gray or dove color, and shall be entirely free from granular, black and brilliant specks.

Finished rolled material shall be free from cracks, flaws, injurious seams, laps, blisters, ragged and imperfect edges, and other defects. It shall have a smooth, uniform finish and shall be straightened in the mill before shipment.

Material shall be free from loose mill scale, rust, pits, or other defects affecting its strength and durability.

Physical tests shall be required for billets bearing against, or functioning as, expansion rollers or rockers.

Rivet steel shall conform to the requirements of the Standard Specification for "Steel Structural Rivets" A.S.T.M. Designation: A502-91.

ARTICLE 15. <u>STEEL CASTINGS</u>: Steel castings shall conform to the requirements of the Standard Specification for "Steel Castings, Carbon, for General Application" of the A.S.T.M. Designation: A27, with the following additions:

Unless otherwise specified, all steel castings shall be Grade 65-35, fully annealed.
Test specimens shall show a fracture having a silky or fine granular structure throughout, easily machined and meet all chemical and physical requirements of this specification.
Castings shall be true to pattern, free from cracks, gas holes, flaws and excessive shrinkage. Large castings, if required by the Engineer, shall be suspended and hammered all over. No cracks, flaws or other defects shall appear after such treatment.
No sharp unfilleted angles or corners will be allowed.
One tension test and one bend test shall be made from each melt in each heat treatment charge and from each casting weighing five hundred (500) pounds or over.

ARTICLE 16. <u>IRON CASTINGS</u>: Iron castings shall conform to the requirements of the Standard Specification for "Gray Iron Castings" of A.S.T.M. Designation: A-48 latest issue, Class 30, with the following additions:

Iron castings shall be true to pattern in form and dimensions,close and even grained, free from pouring faults, sponginess, cracks, gas holes and other defects in positions affecting their strength

and value for the service intended.

Castings having blow holes plugged or filled with putty or cement of any kind will be rejected.

ARTICLE 17. STEEL FORGINGS: All carbon and alloy steel forgings from which pins, rollers, and other forged parts are to be made shall conform to the requirements of the Standard Specification for "Steel Forgings, Carbon and Alloy, for General Industrial Use" of A.S.T.M. Designation:A 668, with the following additions:

Structural forgings shall be Class C carbon steel, unless otherwise, called for. Machinery forgings shall be Class C carbon steel, Class E carbon steel, or Class H nickel steel, as specified. All forgings shall be thoroughly annealed.

The yield point of Class C forgings shall be not less than 33,000 pounds per square inch.

The tensile requirements for forgings from 20 to 30 inches in diameter shall conform to the requirements for forgings 12 to 20 inches in diameter.

All forgings shall meet the bend test requirements of paragraph S3., supplementary requirements of Specification A 668.

ARTICLE 18. DUCTILE IRON: Ductile iron castings shall conform to the requirements of the Standard Specification for Ductile Iron Castings of A.S.T.M. Designation:A536. Foundry certificate, when required, will provide chemical and mechanical properties of test specimens.. Tensile requirements shall be a minimum Grade 60-40-18 unless otherwise specified.

ARTICLE 19. CAST AND DUCTILE IRON PIPE: Cast iron pipe shall conform to the requirements of the Standard Specification for "Cast Iron Soil Pipe and Fittings"of A.S.T.M. Designation:A74. Ductile iron pipe shall conform to the requirements of the Standard Specification for "Ductile Iron Gravity Sewer Pipe" of A.S.T.M. Designation:A746 and shall be centrifugally cast. All cast iron pipe shall be marked in clear lettering with trade name of manufacturer, weight, class or nominal thickness.

ARTICLE 20. MALLEABLE CASTINGS: Malleable castings conform to the requirements of the Standard Specification for "Ferritic Malleable Iron Castings" of A.S.T.M. Designation: A47, Grade 32510.

Malleable castings shall be true to pattern in form and dimensions, close and even grained and free from pouring faults, sponginess, cracks, gas holes and other defects in locations affecting their strength and value for the service intended.

The castings shall be boldly filleted at angles, and the arises shall be sharp and perfect. The surfaces shall have a workmanlike finish.

Particular care shall be exercised so as not to embrittle malleable castings when galvanizing. All galvanized malleable castings shall meet specification requirements after galvanizing.

ARTICLE 21. ROLLED PHOSPHOR BRONZE: Rolled Phosphor-Bronze shall conform to the Standard Specification for " Rolled Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses" of A.S.T.M. Designation: B-100.

ARTICLE 22. BRONZE CASTINGS: Bronze for machinery parts shall conform to the requirements of the Standard Specification for "Bronze Castings for Bridges and Turntables" of A.S.T.M. Designation:B-22, with the following modifications:

Bronze shall not contain sulphur. The phosphorous shall be introduced in the form of phosphor-tin or in phosphor-copper. The alloy shall be cast into ingots and allowed to cool, and the castings shall be poured from the re-melted ingots. The chemical analysis of each heat shall be furnished.

Cracks or other evidence of excessive brittleness in compression test specimens after test may be cause for rejection. The hardness of the finished castings shall be tested by the Brinell ball method and a record of the test furnished. The ball shall be of hardened steel, 10 millimeters in diameter, and the load shall be 500 kilograms. The load shall be applied for 30 seconds to a finished plane surface. At least two Hardness tests shall be made upon each heat. A test shall be made on each trunnion bearing.

Test specimens shall be made from coupons which are a part of the casting and which have been fed and cooled under the same conditions as the casting.

At least one compression test shall be made from each melt from grades A, B, and C; and one compression and one tension test for grade D. For castings weighing over 100 pounds, finished, the prescribed tests shall be made for each casting. The permanent set in inches under 50,000

pounds per square inch shall be recorded for grades A,B,C, and D.

Bronze castings shall be free from inclusions of foreign material, casting faults, injurious blow holes or other defects rendering them unsuitable for the service intended.

Certain small bearings, where called for on the Plans, shall be equipped with self-lubricating bronze bushings. The bronze shall conform to the requirements given above and shall be equal to Grade "C". Holes shall be drilled into the bearing surfaces of these bushings in a regular pattern to cover the entire surface of the rotating parts. After the bushings have been machined to the proper tolerances, the holes shall be filled with metal and graphite lubricating inserts applied under a pressure of 20,000 lbs.per square inch. These bushings shall be equal to the Lubrite bearings manufactured by Merriman Brothers, Boston, Mass.

ARTICLE 23. WELDING: All welding shall be done by the electric arc method or other approved method and the welding operators shall be experienced in this particular class of work.

Preparation: Surfaces to be welded shall be reasonably cleaned by wire brushing, chipping or hammering of loose scale, rust, paint or other foreign matter; except that a thin coating of linseed oil need not be removed before welding.

During welding, the parts to be welded shall be held by sufficient clamps or other adequate means to keep them straight and in close contact.

Electrodes: Wires used for electrodes or welding rods shall be an approved covered commercial steel wire made for this purpose, of uniform homogeneous physical structure, free from irregularities in surface, from hardness, segregation, foreign matter, oxides, pipes, seams, or other defects.

Either the recommendations of the electrode manufacturer, or information based on the tests of the same kind of electrodes with the same kind of current shall be used in determining the range of current values for each electrode size.

Welding: In any respect not covered by the above provisions the work shall conform to the specifications for Design Construction Alteration and Repair of Highway and Railway Bridge Fusion Welding of the American Welding Society, 1941.

Welds: All slag shall be removed from finished welds and they shall show uniform section, smoothness of weld metal, feather edges without overlaps and freedom from porosity and clinkers. Visual inspection at edges and ends of fillets and butt joint welds shall indicate good fusion with, and penetration into, base metals.

ARTICLE 24. GALVANIZED METAL: Where called for in the itemized specifications, iron such as screw bolts, nuts, washers and bolts or equal, spikes, pipes, etc., shall be galvanized . All screw bolts and nuts must be threaded before galvanizing.

Before galvanizing all iron shall be thoroughly cleaned of all scale, rust, dirt, grease, etc., by first bathing it in a solution of sulfuric acid, then dipping it in turn in lukewarm water and in a strong solution of muriatic acid.

All galvanized articles must stand the following test. After eight one-minute immersions in a standard solution of copper sulphate, the article being thoroughly wiped after each immersion, there shall be no copper deposit observed. Lots, the samples of which do not stand this test, may be rejected. This test shall be performed in accordance with Standard Test Method for "Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles" of A.S.T.M. Designation A-90. Certificates of Tests may be accepted.

ARTICLE 25. COPPER: Sheet copper shall be either hot or cold rolled and shall be free from bad edges and corners and all surface defects. It shall be clean, of uniform and quality, true to gauge and patent leveled. It shall be free from sulphur and other detrimental impurities and contain a minimum of ninety-nine and one-half (99 ½) per cent pure copper and shall conform to the requirements of the Standard Specification for "Copper Sheet, Strip, Plate, and Rolled Bar" of A.S.T.M. Designation:B152.

ARTICLE 26. WATERPROOFING MATERIAL: Asphalt and coal tar pitch shall be chemically inert, impervious to or unaffected by water or by alkalies in acids or cinders. They shall form, without the use of primer, a permanent, tenacious, mechanical bond, not only to the fabric and concrete to which it is applied but also the concrete poured against it.

Coal tar pitch shall be homogeneous, high carbon coal tar pitch and shall conform to the requirements of the Standard Specification for "Coal-Tar Pitch Used in Roofing, Dampproofing, and Waterproofing" of A S.T.M. Designation: D450.

Asphalt shall be a tough asphaltic bitumen derived from an asphaltic petroleum by careful refining. It shall not be a fluxed or cut-back product, and shall be free from coal tar and any of its derivatives.

Asphalt shall be homogeneous, free from water and shall conform to the requirements of Standard Specification for "Asphalt Used in Dampproofing and Waterproofing" of A.S.T.M. Designation: D449.

Asphalt and pitch shall be delivered on the work in packages that are plainly marked with the manufacturer's brand and indicating the grade and quality of the material.

Waterproofing felt shall be a roofing felt produced by "felting" vegetable and animal fibers. The surface of the felt shall be uniformly smooth and upon splitting or tearing on the bias, shall appear reasonably free from lumps and unbeaten stock (i.e., stock which has not been beaten or shredded into fiber in the process of manufacture) and particles of foreign substances (i.e., fragments of stone, metal, leather, rubber, straw, wood, etc.).

The desaturated felt shall conform to the following requirements:

Weight of Moisture-Free Desaturated Felt-Minimum five and two-tenths (5.2) lbs. per hundred (100) sq. ft. ("Number" 25).

Ash in Moisture -Free Desaturated Felt-Maximum Ten (10%) per cent.

The saturant for the felt shall be composed of coal tar from which the highly volatile constituents have been removed.

In the process of manufacture, a single thickness of dry roofing felt shall be saturated with the saturant.

The felt shall be thoroughly and uniformly saturated and shall show no unsaturated spots at any point upon cutting two (2) inch strips at random across the entire sheet and splitting them open for their full length.

The fabricated bituminized felt shall conform to the Standard Specification for "Coal-Tar-Saturated Organic Felt Used in Roofing and Waterproofing" of A.S.T.M. Designation: D227.

ARTICLE 27. CONCRETE AND MASONRY:

Material: Concrete shall consist of Portland cement, fine aggregate, and a coarse aggregate mixed in the proportions specified for the various classes given. The same brand of cement, and the same kind of aggregate shall be used throughout the whole of any showing face.

Proportions: All concrete shall be made of Portland cement, fine and coarse aggregate proportioned as indicated under its respective item.

The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface. The combined aggregates shall be of such composition of sizes that when separated on the No.4 standard sieve, the weight passing the sieve (fine aggregate) shall not be less than thirty percent nor greater than fifty percent of the total, unless otherwise approved by the Engineer.

The methods of measuring concrete materials shall be such that the proportions can be accurately controlled and easily checked at any time during the work.

a. Plain Concrete: Plain concrete shall have a minimum cement factor of five bags per cubic yard of concrete, and a maximum of eight and one-half U.S. gallons of water per bag of cement including water contained in the aggregate. Such concrete shall develop a strength of at least two thousand pounds per square inch when tested in accordance with the Standard Test Method for "Compressive Strength of Cylindrical Concrete Specimens" of A.S.T.M. Designation: C39.

b. Average Concrete: Proportions and Twenty-Eight Day Strengths

The producer of average concrete shall use mix proportions and water cement ratios which have been shown by previous use to produce satisfactory concrete of the required strength at a suitable slump with a maximum of four inches for heavy slabs and five inches for walls and footings. Average concrete shall be limited to the concrete strengths shown in Table "A" below, and the cement factor used shall not be less than the value given in the table for the corresponding concrete strengths.

TABLE A		
Minimum compressive strength in 28 days (f'c) pounds per square inch	Minimum bags of cement per cubic yard of concrete	Maximum permissible water cement ratio, U.S. Gallons per 94-pound sack of cement for air-entrained concrete
3200	6.0	6-1/4

Each load of concrete shall be certified by the producer, whether produced at ready mix plant or site mixed, as to the concrete strength and actual quantities per cubic yard of each material, including water, contained therein.

c. Controlled Concrete: Proportions and Twenty-Eight Day Strengths

The strength of all controlled concrete shall be established in accordance with the following provisions:

1. Preliminary tests of controlled concrete. (a) Job site, weighed, batched and mixed concrete. Preliminary tests of controlled concrete shall be made by an approved testing laboratory, in advance of the beginning of operations, using the materials proposed and consistencies as hereinafter specified, and tested wet in accordance with the standard method of test for compressive strength of molded concrete cylinders, Standard Test Method for "Compressive Strength of Cylindrical Concrete Specimens" of A.S.T.M. Designation: C39, including tests of fine and coarse aggregated and the provisions therein for curing in a moist room of seventy (70^0) degrees Fahrenheit. A curve representing the relation between the average strength of the concrete at twenty-eight days, or at earlier periods, and the water cement ratio shall be established for a range of values including all of the strengths and ages called for the plans. The tests shall include at least four different water cement ratios, and at least four specimens for each water cement ratio. The mixes used in the tests shall have a slump of five inches, with a tolerance of plus or minus one inch. The water cement ratio to be used in the structure shall be the corresponding to a point on the curve established by these tests, representing a strength of concrete fifteen per cent higher than the minimum ultimate strength called for on the plans. The cement factor used in the work shall have at least the value established by the tests, but shall not be less than the factor given in Table "B" below for the corresponding concrete strength.

TABLE B

Minimum compressive strength in twenty-eight days (f'c) pounds per square inch	Minimum bags of cement per cubic yard of freshly mixed concrete
2000	5.00
2500	5.25
3000	5.75
3200	6.00
3500	6.50
3750	6.75
4000	7.00
5000	7.50

Sampling: During the progress of the work, samples of concrete shall be taken directly from the mixer in accordance with Standard Method of "Sampling Freshly Mixed Concrete" of A.S.T.M. C172. Each sample shall be tested for slump, air content, temperature and weight per cubic foot in accordance with Standard Test Method for "Unit Weight, Yield, and Air Content (Gravimetric) of Concrete" of A.S.T.M. C138 and Standard Test Method for "Slump of Hydraulic Cement Concrete" of A.S.T.M. C143. If the measured slump or air content falls outside the limits specified, a check sampling shall be made immediately on another portion of the same sample. In the event of a second failure, the concrete shall be considered to have failed to meet the requirements.

If the time required to discharge the load being sampled is greater than 15 minutes, a separate set of test cylinders shall be made from each one-third portion of the load taken at a greater interval than 15 minutes.

Molding standard test acceptance cylinders: For each class of concrete placed on any one day, three standard acceptance cylinders shall be made from the sampling described above for each fifty cubic yards or fraction thereof placed. These specimens shall be molded, stored for 24 hours, carefully transported to an approved testing laboratory and cured for 27 days in accordance with Standard Practice for "Making and Curing Concrete Test Specimens in the Field" of A.S.T.M. Designation: C31.

Additional specimens for determining when forms may be stripped or a structure may be put to use may also be required. These field cylinders shall be removed from their molds after 24 hours, stored and cured on the work site as near to the sampled concrete in the structure as possible, and subject to the same exposures as the job concrete of which it is representative. These field cylinders shall be kept unmolested on the structure for at least three-fourths of the test period before being taken to the laboratory for testing.

The specimens shall be marked and identified with tags on which shall be noted the class of concrete, date and time of day when molded, the delivery receipt and truck number if ready-mixed, the results of the tests of slump, air content and temperature, and a clear description of where the concrete was placed in the structure. The date of arrival at the testing laboratory also shall be noted thereon.

Compression tests: Twenty-eight days after the specimens were molded the three acceptance cylinders shall be tested in compression in accordance with Standard Test Method for "Compressive Strength of Cylindrical Concrete Specimens" of A.S.T.M. Designation: C39. by a testing laboratory designated by the Engineer. The test strength shall be the average of the breaking strengths of the three acceptance cylinders. If one of the molded specimens shall show manifest evidence of improper sample, molding, handling or testing, it shall be discarded and the remaining two averaged. If more than one cylinder must be discarded, the entire test shall be discarded. In no case shall a given class of concrete be represented by less than three separate samplings and three compression test strengths.

When the average strength of the test cylinders falls consistently below the minimum ultimate strength required by the design, a change in the proportions or water content of the concrete shall be made, to obtain the required strength for the remaining portion of the structure.

When the average strength of the test cylinders for any portion of the structure is less than that required by the design, the concrete represented by such cylinders may be considered to be of

adequate strength if: (1) the designer of the structure submits a correct analysis of stresses to show that the stresses in the portion of the structure affected will not exceed the allowable stresses, with the value of f'c equal to the compressive strength of the concrete as determined by the tests; or (2) if the tests are performed in accordance with the specifications for the Standard Test Method for "Obtaining and Testing Drilled Cores and Sawed Beams of Concrete" of A.S.T.M. C42 using hardened concrete for compressive and flexural strengths, and the tests show that the strength of the concrete equals or exceeds the design strength, and provided test specimens are obtained from the structure in such manner that the strength of the structure is not impaired; or (3) the structure may be considered to meet the designated requirement if load tests are performed as specified in Section 27-607 "Inspections" of the New York City Local Law 65-1990, Article 5, for that portion of the structure where the concrete of questionable strength has been placed and the results and interpretation of such tests and the resulting safe capacity of the structure are approved by the Engineer.

Arrangements for tests of concrete, concrete materials and reinforced concrete structures where required by the provisions of this article or ordered by the Engineer shall be made by the Contractor. All such tests shall be made without additional expense to the City.

d. Mixing and Placing Concrete: Preparation of equipment and place of deposit: Before concrete is placed, all equipment for mixing and transporting the concrete shall be cleaned, all debris and ice shall be removed from the spaces to be occupied by the concrete, forms shall be thoroughly wetted or oiled masonry filler units that will be in contact with concrete shall be well drenched and the reinforcement shall be thoroughly cleaned of ice or other coatings. Water shall be removed from place of deposit before concrete is placed unless otherwise permitted by the Engineer.

Mixing of concrete: All concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged.

e. Machine Mixing: Batch mixers of an approved type and of not less than 7S-AGC rating shall be used. No continuous mixer shall be used. Mixing shall be continued for at least one and one-quarter (1 1/4) minutes after all the materials and water are in the mixer drum, at a speed of not less than 14 or more than 20 revolutions per minute.

When cement is delivered in bags for use in any item, the batch shall be so proportioned as to use only full batches (i.e.) no fraction of a bag will be permitted.

Mixing shall be continued for at least one and one-half (1 ½) minutes after all the solid materials and water are in the mixer drum.

In all machine mixing the batches of concrete shall be proportioned to the size of the mixer to produce the best results.

For batches larger than one (1) cubic yard, mixing time shall be increased fifteen (15) seconds for each additional cubic yard or fraction thereof.

f. Hand mixing: Hand mixing will not be permitted in any structure.

g. Retempering: All mortar and concrete shall be used while fresh and before it has begun to harden. Any mortar or concrete which has begun to harden shall be removed and not used in the work. No retempering of mortar or concrete shall be allowed.

h. Central mixing: Concrete may be mixed in an approved central plant provided it is hauled to the work in an approved rotating container under the following provisions:

1.) Mixing time shall not be less than three (3) minutes.
2.) Not more than thirty (30) minutes shall elapse between batching and placing.
3.) Not more than ten (10) minutes shall elapse between placing of consecutive batches.
4.) The rotating container shall be thoroughly cleaned after each batch.

The concrete will be rejected if there is any evidence of "setting up" in the mixture.

i. Transit mixing: Concrete may be mixed in approved transit mixers under the following provisions:

The water shall be added to the mix not more than 10 minutes previous to its discharge from the mixer. Water shall not be added while trucks are in transit.

Mixing time shall not be less than five (5) minutes, nor less than one and a half (1 ½) minutes for each cubic yard contained .

Not more than ten (10) minutes shall elapse between placing of consecutive batches.

Concrete is to be mixed in accordance with the Standard Specification for "Ready-Mixed

Concrete" of A.S.T.M. Designation: C94.

Conveying: Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of materials.

Equipment for chuting, pumping and pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery end without separation of materials.

Consistency: As a guide to the consistency required, the range in slump shall be as shown in the following table:

SLUMP		
Type of Construction	**Slump in Inches - Minimum**	**Slump in Inches - Maximum**
Pavements	1-1/2	3
Floors, Massive Section, Heavy Slabs	1	4
Pavement Bases, Sidewalks	1-1/2	4
Walls, Beams, Columns	2	5

In general, the consistency of concrete mixture shall be such that:

1. The mortar clings to the coarse aggregate.

2. The concrete is not sufficiently fluid to segregated when transported to the place of deposit.
3. The concrete, when dropped directly from the discharge chute of the mixer, shall flatten out at the center of the pile but shall stand up and flow at the edges.

4. The mortar shall show no free water when removed from the mixer.

5. The concrete shall settle into place when deposited in the forms and, when transported in metal chutes at an angle of 30 degrees with the horizontal, it shall slide and not flow into

place.

6. The upper layer of the set concrete shall show a cement film upon the surface but shall be free from laitance.

j. Depositing: Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the spaces between the bars. No concrete that has partially hardened or been contaminated by foreign materials shall be deposited on the work, nor shall retempered concrete be used.

When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed. The top surface shall be generally level.

All concrete shall be thoroughly compacted by suitable means during the operation of placing and shall be thoroughly worked around the reinforcement and embedded fixtures and into the corners of the forms.

Where conditions make compacting difficult, or where the reinforcement is congested, batches of mortar containing the same proportions of cement to sand as used in the concrete, shall first be deposited in the forms to a depth of at least one inch.

k. Construction joints: Construction joints other than those shown on the plans will not be permitted without the written permission of the Engineer. The operation of placing concrete shall be continuous between construction joints.

The use of long chutes for conveying concrete from the mixing plant to the forms will be permitted only on written authority from the Engineer. If chutes are allowed and the quality of concrete as it reaches the forms or the methods of placing or working it therein are not satisfactory, the Contractor shall, upon orders from the Engineer, discontinue the use of chutes and reequip his plant for placing the concrete in a satisfactory manner. Under no conditions shall this system be used on work exposed to the effects of salt or brackish water.

Troughs, pipes or short chutes used as aids in placing concrete shall be arranged and used in such a manner that the ingredients of the concrete are not separated. Where steep slopes are required the chutes shall be equipped with baffle boards or be in short lengths that reverse the direction of

movement. When pipes are used they shall be kept full of concrete and have their lower ends kept buried in fresh concrete in the same manner that a tremie is used. All chutes, troughs and pipes shall be kept clean and free from coatings of hardened concrete by thoroughly flushing with water after each run. Water used for flushing shall be discharged clear of concrete in place. Open troughs and chutes shall be of either of metal or metal lined and shall extend as nearly as possible to the point of deposit. When the discharge must be intermittent, a hopper or other device for regulating the discharge shall be provided.

Dropping the concrete a distance of more than 5 feet or depositing a large quantity at any point and running or working it along the forms will not be permitted.

Special care shall be taken to fill each part of the forms by depositing concrete directly as near final position as possible, to work the coarser aggregates back from the face and to force the concrete under and around the reinforcement bars without displacing them. After the concrete has taken its initial set, care hall be exercised to avoid jarring the forms or placing any strain on the ends of projecting reinforcement.

Concrete shall be compacted by continuous working with a suitable tool in a manner acceptable to the Engineer. Slab and girder work, arch ribs and all thin section work shall be thoroughly worked with a steel slicing rod.

In order to secure a smooth, even surface on the exposed surfaces of concrete structures, fine stone forks or spades shall be used to work the coarser aggregate back into the mass and allow the mortar and fine particles to occupy the space adjacent to the forms.

Unless otherwise directed in the itemized specifications, concrete shall be thoroughly compacted during and immediately after depositing by vibrating the concrete internally by means of mechanical vibrating equipment.

Internal mechanical vibrators shall be of a type to be approved by the Engineer. They shall be of sturdy construction, adequately powered, capable of transmitting vibration to the concrete in frequencies of not less than 5000 impulses per minute and shall produce a vibration of sufficient intensity to cause flow or settlement of the concrete into place without a separation of the ingredients.

The vibratory element shall be inserted into the concrete at the points of deposit and in the areas

of freshly placed concrete. The time of vibration shall be of sufficient duration to accomplish through consolidation, complete embedment of the reinforcement, the production of smooth surfaces free from honeycombing and air bubbles, and to work the concrete into all angles and corners of the form. However, over vibration shall be avoided and vibration shall continue in a spot only until the concrete has become uniformly plastic and shall not continue to the extent that pools of grout are formed.

The length of time of vibration depends upon the frequency of the vibration (impulses per minute), size of the vibrators and the slump of the concrete; and this length of time be determined in the field.

The internal vibrators shall be applied at points uniformly spaced not further apart than the radius over which the vibration is visibly effective and shall be applied close enough to the forms to effectively vibrate the surface concrete. The vibration shall not be dissipated in lateral motion but shall be concentrated in vertical settlement in consolidation of the concrete.

The vibrator shall not be used to push or distribute the concrete laterally. The vibrating element shall be inserted in the concrete mass sufficient depth to vibrate the bottom of each layer effectively, in as nearly vertical position as practicable. It shall be withdrawn completely from the concrete before being advanced to the next point of application.

To secure even and dense surfaces, free from aggregate pockets or honeycomb, vibration shall be supplemented by working or spading by hand in the corners and angles of forms and along form surfaces while the concrete is plastic under the vibratory action.

A sufficient number of vibrators shall be employed so that at the required rate of placement, thorough consolidation is secured throughout the entire volume of each layer of concrete. Extra vibrators shall be on hand for emergency use, and for use when other vibrators are being serviced.

The use of surface vibrators to supplement internal vibration will be permitted when satisfactory surfaces cannot be obtained by the internal vibration alone and when the Contractor has obtained the approval of the Engineer of the equipment to be used. Surface vibrators shall be applied only long enough to embed the coarse aggregate and to bring enough mortar to the surface for satisfactory finishing.

The use of approved form vibrators will only be permitted when its is impossible to use internal

or external vibrators. When permitted, they shall be attached to or held on the forms in such am manner as to effectively transmit the vibration to the concrete and so that the principle path of motion of the vibration is in a horizontal plane.

All exposed edges of concrete and exposed joints shall be chamfered one inch, unless otherwise shown or noted.

Concrete shall be placed in continuous horizontal layers, the thickness of which generally shall not exceed 10 to 12 inches. When it is necessary by reason of an emergency to place less than a complete horizontal layer at one operation, such layer shall terminate in a vertical bulkhead. In any given layer the separate batches shall follow each other so closely that each one shall not be injured and that there shall be no line of separation between the batches. Each layer of concrete shall generally be left somewhat rough to secure efficient bonding with the next layer above. A succeeding layer placed before the underlying layer has become set shall be compacted in a manner that will entirely break up and obliterate that tendency to produce a construction joint between the layers.

Layers completing a day's work or placed just prior to temporarily discontinuing operations shall generally be cleaned of all objectionable material as soon as the surface has become sufficiently firm to retain its form. To avoid visible joints as far as possible upon exposed faces, the top surface of the concrete adjacent to the forms shall be finished by being smoothed with a plaster mason's trowel.

Horizontal layers so located as to produce a construction joint at a location wherein a "feather edge" might be produced in the succeeding layer, shall be so formed by inset form work that the succeeding layer will end in a body of concrete having a thickness of not less than six (6") inches.

After the concrete has begun to harden, it shall not be walked upon in less than twelve hours.

The operation of compacting the concrete shall be conducted so as to form a compact, dense, impervious artificial stone which shall show a smooth face on an exposed surface. The weight of rammers, if used, shall be satisfactory to the Engineer. Porous, plastered or defective concrete shall be removed and replaced, as directed by the Engineer, entirely at the Contractor's expense.

Concrete shall not be exposed to the action of water before setting, or deposited in water, except with the approval of the Engineer and under his immediate supervision.

The method and manner of placing shall be as hereinafter designated.

Concrete deposited under water shall be carefully placed in a compacted mass in its final position by means of a tremie, a closed bottom dump bucket or other approved method and shall not be disturbed after being deposited. Special care must be exercised to maintain still water at the point of deposit. No concrete shall be placed in running water and all form work designed to retain concrete under water shall be water-tight. The consistency of the concrete shall be carefully regulated and special care shall be exercised to prevent segregation of the materials. The method of depositing concrete shall be so regulated as to produce approximately horizontal surfaces.

When a tremie is used, it shall consist of a tube having a diameter of not less than 10 inches, constructed in sections having flange couplings fitted with gaskets. The means of supporting the tremie shall be such as to permit the free movement of the discharge and over the entire top surface of the work and shall be such as to permit it to be rapidly lowered when necessary to choke off or retard the flow. The discharge end shall be entirely sealed at all times and the tremie tube kept full to the bottom of the hopper. When a batch is dumped into the hopper the tremie shall be slightly raised, but not out of the concrete at the bottom, until the batch discharges the bottom of the hopper. The flow is then stopped by lowering the tremie. The flow shall be continuous and in no case shall be interrupted until the work is complete.

When concrete is placed by means of a bottom dump bucket, the bucket shall have a capacity of not less than ½ cubic yard. The bucket shall be lowered gradually and carefully until it rests upon the concrete already placed. It shall then be raised very slowly during the discharge travel, the intent being to maintain as nearly as possible, still water at the point of the discharge and to avoid agitating the mixture.

1. Bonding Construction Joints: In joining fresh concrete to concrete that has already set, the work already in place shall have its surface raked out over thoroughly with a suitable tool to remove all loose and foreign material. This surface shall then be washed and scrubbed with wire brooms and thoroughly drenched.

It shall remain moist until the new concrete is placed. Immediately prior to the placing of the new concrete, all forms shall be drawn tight against the concrete already in place and the old surface shall be thoroughly coated with a very thin coating of neat cement.

In order to bond successive courses, suitable keys shall be formed at the top of the upper layer of each day's work and at other levels where work is interrupted. These keys shall occupy about one-third of the area of the joint unless otherwise noted on the plans and be formed with beveled wood forms which shall be thoroughly saturated with water prior to placing. Rough stone or steel dowels may be used in lieu of keys if so permitted by the Engineer in writing. The size and spacing of keys and dowels shall be as determined by the Engineer.

In construction joints exposed to view or in other construction joints where seepage of water is particularly objectionable, a metal baffle strip of 16- ounce copper, shall be inserted. This strip shall be placed not less than three (3) inches from the unexposed face of the concrete a distance of not less than two (2) inches.

l. Forms and Detail of Construction: Design and construction of forms: The design and construction of forms shall conform to the following requirements: Forms shall conform to the shape, lines and dimensions of the member as called for on the plans. Forms shall be substantial and sufficiently tight to prevent leakage of mortar; and shall be properly braced or tied together so as to maintain position and shape and insure safety to workmen and passerby. Temporary openings shall be provided where necessary, to facilitate cleaning and inspection immediately before depositing concrete.

Where the height of the shores exceeds ten feet, adequate diagonal bracing shall be provided in both longitudinal and transverse directions. In addition, adequate diagonal braces shall be provided at the ends of the framework. Diagonal bracing shall extend from the top of the bottom of shores.

The unbraced length of wood shores supporting forms shall not exceed fifty times the least dimension. Metal shores or frames shall be types approved by the Engineer and shall be installed in accordance with his approval. Shores shall be adequately secured at the top and shall be properly wedged at top or bottom, if required.

Where shores rest upon the ground, adequate mud sills, or other bases, shall be provided to support the shores adequately.

Qualified workmen shall be detailed constantly during the placing of concrete to insure that there

is no movement of shores, braces or other supports. The name of the foreman in charge of the form work shall be posted in the field office of the contractor.

The individual firm or corporation who does the concrete work shall be responsible for the adequate design and construction of all forms used in the construction of the building. Wherever the shore height exceeds fourteen feet, or the load on the forms exceeds one hundred fifty pounds per square foot, or power buggies are used, or two stage shores are used, the contractor shall certify that the form design has been checked and approved as adequate by a licensed professional engineer who has had at least five years of experience as a structural engineer, and that the forms have been constructed in conformance with the design which was checked and approved by the said engineer.

Detailed plans for false work or centering shall be supplied to the Engineer on request, but his approval of them, or acquiescence in the work constructed according to them, will not relieve the Contractor of responsibility for satisfactory results. For calculating the strength of false work or centering, a weight of 150 pounds per cubic foot shall be assumed for green concrete.
In general, false work which cannot be founded upon a solid footing, shall be supported by false work piling. False work piling shall be spaced and driven as ordered by the Engineer. No extra compensation for false work or false work piling will be allowed, such work being considered as part of the form work.

The Engineer may require the contractor to employ screw jacks or hardwood wedges in connection with the centering or false work in order to take up any slight settlement in the form work either before or during the placing of concrete.

Falsework shall be set to give the structural camber indicated on the plans or as specified, plus allowance for shrinkage and settlement.

Any metal ties or anchorages which are required within the forms to hold them to correct alignment and location shall be so constructed that the metal work can be removed to a depth of at least 2 inches from the face surface by spalling or otherwise. Wire ties will not be permitted without written permission of the Engineer. In case wire ties are permitted, all wires upon removal of the forms, shall be cut back at least 1/4 inch from the face of the concrete with sharp chisels or nippers. Nippers are necessary for green concrete.

All cavities produced by the removal of metal ties shall be carefully filled with a mortar of fine

aggregate and cement in the proportion that has been employed for the particular class of concrete treated and the surface left smooth and even and uniform in color. The surface film of all such pointed surfaces shall be carefully removed before setting occurs.

All forms shall be set and maintained true to the line designated until the concrete is sufficiently hardened. In general, form work shall remain in place, after placing of concrete, for the approximate periods hereinafter specified under "Removal of Forms."

For narrow walls where access to the bottom of the forms is not readily attainable otherwise, the lower form boards shall be left loose so that they may be removed for cleaning out all chips, dirt, sawdust or other extraneous material immediately prior to placing concrete.

Forms reused shall be maintained at all times in good conditions as to accuracy of shape, strength, rigidity, water tightness and smoothness of surface. Any warped or bulged lumber must be carefully resized before being reused. Forms unsatisfactory in any respect shall not be used, and, if condemned, it shall be removed immediately from the work.

For parapets or balustrades and the exposed faces of girders, arch ribs, copings, etc., forms shall be treated with an approved oil. All other forms shall be treated with approved oil; or thoroughly drenched and saturated with water on both faces immediately before concrete is placed therein. Any material that will stick to or discolor the concrete shall not be used.

The foregoing specifications as regards design, mortar. water tightness, filleted corners, beveled projections, bracing, alignment, removal, reuse and oiling, shall apply with equal force to Metal Forms. The metal used for forms shall be of such thickness that the forms remain true to shape. All bolt and rivet heads shall be counter-sunk. Clamps, pins or other connecting devices shall be designed to hold the forms rigidly together and to allow removal without injury to the concrete. Metal forms which do not present a smooth surface or line up properly shall not be used. Special care shall be exercised to keep metal forms free from rust, grease or other foreign matter such as will tend to discolor the concrete.

The time of removal of forms shall be subject to the approval of the Engineer.

Except on side faces to be surface finished, the following table may be used as a guide for the minimum time required before the removal forms, not counting the days in which the temperature is below 40 degrees Fahrenheit.

Minimum Periods (In Days) For Removing Forms For DifferentCement Items

Cement Item	Number of Days
Arch Centers*	15 - 20
Centering under beams	10 - 15
Floor slabs	7 - 13
Columns	5
Walls, sides of beams and all other parts	3

* Arch centering shall not be removed in such a manner as to insure the complete safety of the structure.

Forms shall be removed in such a manner as to insure the complete safety of the structure. Where the structure as a whole is supported on shores, beam and girder sides, column and similar vertical forms may be removed after twenty-four hours or when the concrete is sufficiently hard not to be injured thereby. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to support safely their weight and the load thereon.

m. Reinforcement: Cleaning and Bending reinforcement: Metal reinforcement, at the time concrete is placed, shall be free from loose rust scale or other coatings that will destroy or reduce the bond. All bars shall be bent cold. Reinforcement shall be formed to the dimensions indicated on the plans before it is embedded in the concrete.

Placing Reinforcement: Metal reinforcement shall be accurately placed, spaced and adequately secured in position by concrete or metal chairs or spacers. The clear distance between parallel bars, except in columns, shall be not less than the nominal diameter of the bars, one and one-third times the maximum size of the coarse aggregate, nor one inch. Where reinforcement in beams or girders is placed in two or more layers, the clear distance between layers shall not be less than one in., and the bars in the upper layers shall be placed directly above those in the bottom layer.

Splices in reinforcement of slabs, beams and girders: In slabs, beams and girders, splices of reinforcement at points of maximum stress shall be avoided wherever possible. Such splices where used shall be welded, lapped or otherwise fully developed, but in any case, shall transfer the entire stress from bar to bar without exceeding the allowable bond and shear stresses. The minimum overlap for a lapped splice shall be twenty-four bar diameters, but not less than twelve inches for bars. The clear distance between bars shall also apply to the clear distance between a

contact splice and adjacent splice or bars.

Concrete protection for reinforcement: The reinforcement of footings and other principal structural members in which the concrete is deposited against the ground shall have no less than three inches of concrete between it and the ground contact surface. If concrete surfaces after removal of the forms are to be exposed to the weather or be in contact with the ground, the reinforcement shall be protected with not less than two-inches of concrete for bars larger than No. 5 and one and one-half inches for No. 5 bars or smaller.

The concrete protective covering for reinforcement at surfaces not exposed directly to the ground or weather shall be not less than three-quarters of an inch for slabs and walls; and not less than one and one-half inches for beams and girders, and two inches for columns. In concrete joist floors in which the clear distance between joists is not more than thirty inches, the protection of reinforcement shall be at least three-quarters of an inch.

Concrete protection for reinforcement shall in all cases be at least equal to the diameter of the bars.

Exposed reinforcing bars intended for bonding with future extension shall be protected by an anti-corrosive coating or other adequate covering.

n. Provision for Concreting in Cold Weather: No concrete shall be placed when the atmospheric temperature is below 40 degrees Fahrenheit unless permission to do so is granted in writing by the Engineer. When directed by the Engineer the Contractor shall furnish sufficient canvas and framework, or other type of housing, to enclose and protect the structure in such a way that the air surrounding the fresh concrete can be kept at a temperature above 50 degrees Fahrenheit for a period of 5 days after the concrete is placed.

Sufficient heating apparatus, such as stoves, salamanders, or steam equipment, and fuel to furnish all required heat shall be supplied. All water used for mixing concrete shall be heated to a temperature of at least seventy (70^0) degrees, but not over one hundred fifty (150^0) degrees Fahrenheit. Aggregates shall be heated either by steam or by dry heat to a temperature of at least seventy (70^0) degrees, but not over one hundred fifty (150^0) degrees Fahrenheit. The heating apparatus shall be such as to heat the mass uniformly and preclude the possibility of the occurrence of hot spots which will burn the material.

Where salamanders or other heating equipment are used, escape hatches and protection against fire shall be provided.

The temperature of the mixed concrete shall not be less than sixty (60^0) degrees Fahrenheit at the time of placing in the forms. In cases of extreme weather condition, the Engineer may, at his discretion, raise and lower limiting temperatures for water, aggregate and mixed concrete.

o. Waterproofing: Unless otherwise noted on the plans or directed by the Engineer the surfaces of all reinforced concrete bridge abutments and retaining walls, arch and culvert bridges, which will come in contact with fill, shall be waterproofed above the foundations by coating with approved Bituminous Waterproofing Material. Bituminous material shall be a two coat system consisting of primer and asphalt coats. Primer shall conform to the Standard Specification for "Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing" of A.S.T.M. Designation: D 41. Topcoat shall conform to Standard Specification for "Asphalt Used in Dampproofing and Waterproofing" of A.S.T.M. Designation : D 449 Types I, II or III.

p. Curing Concrete: Careful attention shall be given to the proper curing of all concrete parapets, balustrades, floors, sidewalks and finished surfaces.

Such surfaces shall be covered and remain wet as indicated below or be sprinkled each morning and evening or more frequently if deemed necessary by the Engineer.

For all concrete structures, concrete made with normal Portland cement shall be maintained above fifty (50^0) degrees Fahrenheit in a moist condition for at least the first seven days after placing and high-early strength concrete shall be so maintained for at least the first three days.

Parapets, balustrades, pavements, floor and sidewalk slabs and all exposed surfaces shall be cured by the following methods:

1. Quilted Covers: Approved quilted covers shall consist of outer covering materials of burlap, cotton or other approved fabric, the bottom and top cover of which shall each weigh at least six (6) ounces per square yard of fabric, and an inner layer of cotton batting or other approved material weighing at least eight (8) ounces per square yard. These mats shall be quilted, to securely hold the inner cotton batting lining in place and shall be two (2) feet greater in width, after shrinking, than the pavement slabs being cured, and shall be securely held in place and

weighted down to completely cover the edges, as well as the top of the pavement. Adjoining quilts shall be lapped at least twelve (12) inches.Quilted covers shall be kept wet and left in place for a period of not less than five (5) days. These quilted covers shall be laid directly on the pavement as soon as the brooming is completed.

2. Waterproof Sheet Materials: Approved blankets and covers shall have edges lapped at least twelve (12) inches and all edges shall be sealed with pressure sensitive tape. Sheet materials shall be capable of withstanding normal job use without puncturing or tearing. Waterproof Paper Blankets and Polyethylene Coated-White Burlap Blankets shall conform to the material requirements of the Standard Specifications for "Sheet Materials for Curing Concrete" of A.S.T.M. Designation: C 171.

3. Membrane Curing Compounds: Approved liquid membrane-forming compounds shall be Type 1,clear or translucent; Type 1-D, clear or translucent with fugitive dye; or Type 2, white pigmented in accordance with the Standard Specification for "Liquid Membrane-Forming Compounds for Curing Concrete" of A.S.T.M. Designation: C 309. Curing compound shall be uniformly applied by spray or roller over freshly placed damp concrete at a rate of one gallon per 150 square feet. Curing compound shall remain intact for at least 7 days before becoming powdery and non-adherent due to weathering.

The entire surface of the pavement, including the edges and sides shall be kept wet by the above methods or sprinkling with water for the period shown on the following table. The water shall be applied by means of tank trunk sprinkler with a fan spray, unless otherwise ordered by the Engineer, calcium chloride mixed integrally may be used for curing, if shown on the plans.

The interval of laying adjacent slabs, the period to opening to traffic, and the curing period shall be in accordance with the following table depending upon the type of cement used and the season of the year placed; except in cases where a pavement is placed upon a bridge floor, when the Contractor shall proceed as directed by the Engineer.

Minimum period of laying adjacent slabs	Minimum period of opening to traffic	Minimum Curing Period	
		Misting with Water	Quilts

Pavement laid from June 1st to September 15			
5 days	10 days	8 days	5days

Pavement laid from September 15th to June 1st when the average temperature is above 45° F., unless otherwise authorized by the Engineer.

7days	15 days	12 days	7days

The periods of the curing of concrete floors, in the area where waterproofing is to be applied, may be further reduced when approved by the Engineer, provided the waterproofing is placed over this surface of the floor immediately after the quilted covers or waterproof curing sheets, have been removed and the concrete pavement placed as soon as possible thereafter. For this case, in transporting and placing waterproofing and concrete on the bridge floor, individual transporting units in excess of 1,000 pounds including material will not be permitted and hand finishing will be required.

q. Joints: Sliding surfaces of expansion plates shall be planed true and smooth, the marks of the plane paralleling the movement of the joint. Expansion plates shall be well anchored as shown on the plans. All sliding surfaces of expansion plates shall be thoroughly coated with a mixture of graphite and grease just before being placed in position and special care taken to avoid placing concrete in such manner as to interfere with their free action.

Open joints shall be placed at locations designated on the plans and shall be formed by the insertion and subsequent removal of a template of timber, metal or other suitable material. The method of insertion and removal of joint templates shall be such as to avoid the possibility of chipping or breaking down at the edges and the templates shall be so constructed that their removal may be readily accomplished without injury to the work.

Unless otherwise shown on the plans, the expansion joints in the exposed faces of masonry shall be filled for a depth of one (1") inch from the exposed surface with an approved plastic cement which is colored to match the concrete or mortar joints, the balance of the joint shall be filled with premoulded joint material.

False joints matching those in the adjacent pavement shall be formed in structural roadway slabs as shown on the plans or directed by the Engineer.

r. Construction Joints: Joints not indicated on the plans shall be so made and located as to least impair the strength of the structure. Where a joint is to be made, the surface of the concrete shall be thoroughly cleaned and all laitance removed. In addition to the foregoing, all joints shall be thoroughly wetted and slushed with a coat of neat cement grout immediately before placing of new concrete.

At least two hours must elapse after depositing concrete in the columns or walls before depositing in beams, girders or slabs supported thereon. Beams, girders, brackets, column capitals, and haunches shall be considered part of the floor system and shall be placed monolithically therewith.

Construction joints in floors shall be located near the middle of the spans of slabs, beams, girders or unless a beam intersects a girder at such point in which case the joints in the girders shall be offset a distance equal to twice the width of the beam. In this last case provision shall be made for shear by use of inclined reinforcement.

s. Sidewalk Finish on Bridges: Sidewalk finish shall have a one inch wearing surface of mortar, composed of one part Portland cement and two parts fine aggregate, applied at the same time the concrete is placed, to insure thorough bonding. The surface shall be worked, floated and otherwise finished as directed by the Engineer, and marked off at intervals of about six feet unless otherwise shown on the plans. The one inch wearing surface will be paid for at the unit price bid for the concrete with which it is bonded.

t. Finishing Surfaces: The upper surfaces of bridge seats or other bearing surfaces under metal shall be left approximately 1/4 of an inch high and bush hammered to the exact level, unless otherwise noted on the Plans or directed by the Engineer. Where so indicated on the drawings, surfaces shall be tooled or treated by sand blast.

Regardless of any other provisions of these specifications, and subject to the approval of the Engineer, the forms carrying no load, on side faces to be finished may be removed 24 hours to 72 hours (depending on the temperature and the kind of cement used) after the concrete is poured. Immediately after forms have been removed, surfaces that will be exposed in the finished structure shall have all projections and irregularities carefully removed and all cavities neatly filled with mortar of the proportion used in concrete.

Plastering of surfaces will not be allowed. The surface film of all such pointed surfaces shall be

carefully removed before setting occurs. The surfaces shall then be given one of the following finishes:

Surface Finish: Surfaces exposed to view shall, unless otherwise indicated on the plans, be defined as follows:

Copings, Railings and Curbs: All surfaces, except the upper horizontal surfaces not subjected to wear including Columns, Spandrel Walls, Piers, Abutments, Wingwalls and Retaining Walls. All surfaces not in contact with earth and above low water, except the bridge seats, face of back walls and the upper horizontal surfaces not subjected to wear.

Arch Ribs or Rings: All surfaces not in contact with earth and above low water except that portion of the extrados which cannot be seen.

Slabs, Beams and Girders: For structures over highways and railroads, all surfaces above the ground except sidewalk and roadway surfaces. For structures over streams, the fascias, such as the outside surface of outside beams and girders.

For all surfaces the Engineer shall be the sole judge of what surfaces may be seen and also of the elevation which is deemed to be low water.

If in the opinion of the Engineer any exposed surfaces do not present a smooth surface of even texture and appearance, then the following finish shall be repeated as many times as the Engineer deems it necessary, to secure a satisfactory finish. The Engineer shall be the sole judge of the amount of rubbing which will be required.

Immediately after the forms are removed, and necessary patching and smoothing is done, the surface shall be wetted and rubbed with No. 16 Carborundum brick or other abrasive until it is even and smooth and of uniform appearance, without applying any cement or other coating.

The final finish shall be obtained by a thorough rubbing with a No. 30 Carborundum brick or other abrasive of equal quality. After the final rubbing, the surface shall be drenched and kept wet for a period of 7 days, unless otherwise directed.

Railing balusters and other precast members which have been disfigured by the drip from the abrasive shall be thoroughly cleaned by means of a dilute solution of muriatic acid.

Treatment and Finish for Horizontal Surfaces Not Subjected to Wear: All upper horizontal surfaces such as the tops of handrail posts and caps and the tops of parapets, copings and bridge seats shall be formed by placing an excess of material in the forms and removing or striking off such excess with a wooden templet, forcing the coarse aggregate below the mortar surface. The use of mortar topping for concrete railing caps and other surfaces falling under this classification will in no case be permitted.

The final finish for caps and railings shall be obtained in one of the following ways as specified:

After the concrete has been struck off as above described, the surface shall be thoroughly worked and floated with a wooden, canvas or cork float. The operation shall be performed by skilled and experienced concrete finishers. Before this last finish has set, the surface shall be lightly striped with a fine brush to remove the surface cement film, leaving a fine-grained, smooth, but sanded texture.

In lieu of the above, the surface may be finished with a rough carpet float or other suitable device leaving the surface even but distinctly sandy or pebbled in texture.

u. Embedded Stone: Boulders and fragments of rock may be embedded in a large mass of second and third-class concrete. Each stone before being embedded or placed shall be thoroughly washed and scrubbed, if necessary, to free it from all dirt. Stones embedded in concrete shall be at least three inches apart at all points, and no stones shall be placed within three inches of any face of the concrete. Stones shall be laid on their largest bed and worked down into the concrete by bars so as to exclude air from any pockets in the lower surface of the stone.

v. Weep Holes: The contractor shall construct weep holes in all retaining walls and abutments at such points as are indicated on the plans or designated by the Engineer. Payment for all labor and materials required to construct and protect these weep holes will be included in the contract price for concrete.

w. Damaged Concrete: All damage to or disfigurement of concrete of any kind occurring prior to the final acceptance of the work shall be remedied by the Contractor at his own expense and to the satisfaction of the Engineer.

x. Foundation For Concrete: Where concrete is to rest on any excavated surface other than rock,

special care shall be taken not to disturb the bottom of the excavation, and the final removal of material to grade shall not be made until just before the concrete is laid; except in concrete foundations for pavement.

The excavation lines and bases of structures shown on the plans shall be considered as only approximate; and when ordered in writing by the Engineer, shall be placed at such an elevation or changed to such dimensions as will give a satisfactory foundation. Any additional concrete that may be ordered by the Engineer below or beyond the lines shown on the plans will be paid for at the contract price.

No structure shall be commenced without the Engineer's approval.

All rock or hardpan foundation surfaces shall be freed from loose pieces, cut to firm surfaces and cleaned to the satisfaction of the Engineer, before laying concrete. All seams shall be cleaned out and filled with concrete or mortar; and payment for such cleaning out and filling shall be made at the contract price for the class of concrete used.

y. Concrete Parapets: In no case shall concrete parapets or balustrades be placed until the centering or false work for the span has been released and in the case of steel bridges, the riveting completed. In the case of earth filled arch bridges the parapets or balustrades shall not be poured until the fill has been placed.

z. Concrete Floors: Before concrete floors are placed on steel-spans the centering under the bridge shall be released and the span swung free on its supports and the riveting completed.

The operation of placing the concrete in any floor slab shall be continuous between construction or expansion joints.

On steel truss or open Spandrel concrete spans, the concrete in the floor system shall be placed symmetrically about the center line of the span, beginning at the center and working simultaneously toward each end, or beginning at the ends and working simultaneously toward the center. Care shall be taken to prevent the displacement of reinforcement during the placing of concrete.

If for any reason it becomes necessary to introduce a construction joint, this shall be formed by means of a vertical bulkhead so constructed as to produce a key or dove-tailed joint, and shall be

placed as shown on the plans or as directed by the Engineer.

In placing concrete around steel shapes it shall be placed only on one side of the shape until it slushes up over the bottom flange of the shape on the opposite side, after which it shall be placed on both sides to completion.

ARTICLE 28. PAINT AND PAINTING:

(a) General. All paint furnished must be shipped in strong, substantial containers, plainly marked with the name, weight and volume of paint content, together with the color, formula and name and address of manufacturer.

Unless otherwise provided, the materials entering into the composition of paints shall conform to the requirements of the Federal Specifications Board on Paints issued by the U.S. Bureau of Standards, and in the examination of paints the methods specified shall be used.

All paints and coatings shall comply with VOC (volatile organic compounds) content limits in accordance with current environmental regulations.

(b) Requirements: The paints shall consist of pigments of the required fineness and composition ground to the desired consistency in pure raw linseed oil in a suitable grinding machine, to which shall be added additional oil and drier as herein-after specified.

The linseed oil, thinner and drier which are to be used in the preparation of the paints shall meet the following requirements: Raw linseed oil shall meet the requirements of the Standard Specification for "Raw Linseed Oil" of A.S.T.M. D-234 latest issue.
Boiled linseed oil shall meet the requirements of the Standard Specification for "Boiled Linseed Oil" of A.S.T.M. D-260 latest issue.

Thinner:

(a) The turpentine used shall either be the distillate commonly known as "Gum Spirits of Turpentine" or "Steam-Distilled Wood Turpentine" meeting the requirements of the Standard Specification for "Spirits of Turpentine" of A.S.T.M. D-13 latest issue.

(b) Mineral Spirits. The mineral spirits shall be clear and free from suspended matter and water and shall meet the requirements of Standard Specification for 'Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)" of A.S.T.M. D-235 latest issue.

The color shall be "Water White".

Spot Test: The mineral spirits shall evaporate completely from filter paper.

The flash point shall be not lower than 30^0C (86^0F) when tested in a closed cup tester.

Sulphur shall be absent, as determined by the white lead test.
The distillate below 130^0C (266^0F) shall not exceed five percent.

The distillate below 230^0C (446^0F) shall be not less than ninety-seven per cent.

The reaction shall be neutral.

Drier: The drier shall be composed of manganese or cobalt, or a mixture of any of these elements combined with a suitable fatty oil, with or without resins or "gums" and mineral spirits or turpentine, or a mixture of these solvents. It shall be free from sediment and suspended matter. The drier when flowed on metal and baked for two hours at 100^0C (212^0F) shall leave an elastic film. The flash point shall be not lower than 30^0C (86^0F) when tested in a closed cup tester.

It shall mix with pure raw linseed oil in the proportion of one volume of drier to nineteen volumes of oil without curdling, and the resulting mixture when flowed on glass shall dry in not more than eighteen hours. When mixed with pure raw linseed oil in the proportion of one volume of drier to eight of oil, the resulting mixture shall be no darker than a solution of 6 g. of potassium bichromate in 100 cc. of pure sulfuric acid of specific gravity 1.84.

Black Paint: The paint shall be well ground, shall not settle badly or cake in the container, shall be readily broken up with a paddle to a smooth, uniform paint of good brushing consistently and shall dry within eighteen hours to a full oil gloss without streaking, running or sagging. The color and hiding power shall be that which may be specified.

Pigment: The pigment shall consist of carbon black 35 to 50 percent and the balance insoluble silicates.

Liquid. The liquid in the paint shall consist of not less than eighty percent of pure linseed oil, previously specified, the balance to be combined drier and thinner.

THE PAINT SHALL CONSIST OF:	MIN. PERCENT	MAX. PERCENT
Pigment	40	45
Liquid (containing at least 80% Linseed Oil)	55	60
Water	--	0.5
Coarse particles and "skins" (total residue retained on 325 sieve on pigment)	--	1.5

White Paint: The paint shall be well ground, shall not settle badly or cake in the container, shall be readily broken up with a paddle to a smooth, uniform paint of good brushing consistency, and shall dry within eighteen hours to a full oil gloss without streaking, running or sagging. The color and hiding power shall be equal to that which may be specified.

PIGMENT.:

THE PIGMENT SHALL BE COMPOSED OF	MINIMUM PER CENT	MAXIMUM PER CENT
Pigment color	50	70
Zinc Oxide (ZnO)	30	40
Silica, magnesium silicate, aluminum silicate, barium sulphate, or any mixture thereof.....	--	10

Liquid: The liquid in the paint shall consist of not less than ninety percent of pure raw linseed oil previously specified, the balance to be combined drier and thinner.

THE PAINT SHALL CONSIST OF:	MINIMUM PERCENT	MAXIMUM PERCENT
Pigment	62	66
Liquid (containing at least 90% Linseed Oil)	34	38
Water	--	0.5

THE PAINT SHALL CONSIST OF:	MINIMUM PERCENT	MAXIMUM PERCENT
Coarse particles and "skins" (total residue retained on 200 sieve on pigment)		0.5

Black Enamel Paint: The paint shall be well ground, shall not settle badly or cake in the container, shall be readily broken up with a paddle to a smooth uniform paint of good brushing consistency and shall dry to a full gloss without streaking, running or sagging.

The formulas for making twenty (20) gallons of Black Enamel Paint are as follows:

Eighty-one (81) pounds of Basic Paste of which the pigment is six (6) per cent minimum and the vehicle is ninety-four (94) per cent maximum. The vehicle shall be an alkyd resin solution of ninety-four (94) percent minimum and six (6) percent dipentene maximum.

The pigment shall be standard grade carbon black, color #26 and shall meet the requirements of the N.Y.C. Dept. of Citywide Administrative Services Specification No. 31-P-93:66.

The alkyd resin solution shall meet the requirements of the N.Y.C. Dept. of Citywide Administrative Services Specification No.31-E-10:92.

To this is to be added the following vehicle:

Seven (7) Gallons	Mineral Spirits
Two and one-half (2 ½) Gallons	Esteral #750
Two Pounds Ten Ounces (2 lbs. 10oz.)	Drier (32%)
One Pound Five Ounces (1lb. 5oz.)	Cobalt Drier (6%
Ten Ounces (10 oz.)	Manganese Napthenate Drier (6%)

The mineral spirits shall meet the requirements of the N.Y.C. Dept. of Citywide Administrative Services Specification No. 31-M-1:91.

The liquid paint driers shall meet the requirements of the N.Y.C. Dept. of Citywide Administrative Services Specification No. 31-D-1:64.

Colored Paint: The colored paints will be ordered in the form of ready-mixed paint and they

shall meet the requirements as to composition as called for under White Paint but having substituted for the extending pigments sufficient suitable pigment color in order to furnish the required color and hiding power. The paint for first coat shall be tinted lighter in color than the second coat.

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Aluminum Paint: (a) Requirements--Metal Portion. The metal portion of aluminum paste shall be made from commercially pure aluminum and shall be in the form of fine flakes. It shall contain no filler or adulterant such as mica, shall be suitable for making aluminum paint and shall meet the requirements of N.Y.C. Dept. of Citywide Administrative Services Specification No. 31-P-95:94 and shall meet the following requirements:

Paste:

Coarse particles, using alcohol or mineral spirits as the wash liquid:	Minimum Percent	Maximum Percent
Total residue retained on No. 200 sieve	--	0.5
Total residue retained on No. 325 sieve	--	3.0
Fatty or oil matter (polishing lubricant)	--	3.0
Non-volatile portion	63	--

Liquid Portion: The liquid which the aluminum bronze powder is compounded to form the paste shall be completely volatile at 105^0C.

Leafing properties: The aluminum paste shall show a leafing percentage of a minimum of 60% and shall show a leafing percentage of a minimum of 60% after heating in a closed vessel for three (3) hours at a temperature of 45^0C.

Settling: There shall be no appreciable settling out of the metallic portion of the paste in the container, i.e., no free liquid shall be present.

Paint Film: The paint shall be made by mixing with a spar mixing varnish meeting U.S. Navy Department Specification TT-V81 in the proportion of two (2) pounds of aluminum paste to one

(1) gallon of vehicle and shall give a free flowing, smooth, continuous coating, free from breaks and sags when applied to a smooth, vertical steel surface.

(b) Determination of Leafing Properties: This determination requires the use of a polished steel spatula having a blade substantially free from taper and of the following dimensions:

Length.....5-1/2 inches (minimum)
Width.....½ to 9/16 inch
Thickness.....1/16 inch (maximum)

A test tube 6 inches long by 1/4 inch diameter is also required. The leafing reagent or vehicle is made by dissolving 30 gr. of finely powdered (100 mesh) hard cumarone resin in 100 cc. of volatile mineral spirits having a specific gravity at 60^0F. of 0.794 and meeting the requirements of the Federal Specification No. TT-T-291. Solution of the resin may be hastened by warming the mixture. The specific gravity of the solution at 60^0F. is adjusted between the limits of 0.875 and 0.882 by the addition of sufficient mineral spirits. The resulting mixture is allowed to settle and the clear supernatant solution decanted for use in the test. To determine the leafing percentage a 3-1/2 gr. sample of the paste is thoroughly mixed with 25 cc. of the leafing reagent and transferred to the test tube to a depth of 11.5 cm. The tube is closed with a stopper and rotated until a uniform suspension is formed. The clean spatula is then dipped into the mixture, maintained at a temperature or 77^0F plus or minus 5^0F rotated for 20 seconds, withdrawn at a uniform rate of speed requiring a total time of 6 seconds plus or minus 1 second without touching the sides of the test tube, and suspended vertically in free space for 2 minutes. The height of the perfectly leafed area, defined as that portion of the completely covered surface free from cracks or breaks and possessing a high luster or mirror-like reflection, is then measured. The per cent leaf is defined by the equation:

$$\frac{\text{Length of perfectly leafed area}}{\text{Total Depth of immersion}} \times 100 = \text{Leafing Percentage}$$

(c) Determination of Leaf Retention after Heating. After determining the leafing properties of the sample of paste as described in Paragraph b, place 10 gr. of paste in a small, loosely closed, container and heat in an oven at 45^0C. for 3 hours. Again measure the leafing properties to determine the loss of leaf caused by heating.

Painting of Metal Structures: The painting of metal structures shall include, unless otherwise provided in the contract, the proper preparation of the metal surfaces, the application protection and drying of the paint coatings, the protection of pedestrian, vehicular or other

traffic upon or underneath the structure and sub-structure, the protection of all portions of the structure (super-structure and sub-structure) against disfigurement by spatters, splashes and smirches of paint or of paint materials, and the supplying of all tools, tackle, scaffolding, labor, workmanship and materials necessary for the entire work.

Paint shall be applied by means of brushed only. All brushes shall be either round or oval in shape. The paint when applied shall be so manipulated under the brush as to produce a uniform even coating in close contact with the metal or with previously applied paint. In general, the primary movement of the brush shall describe a series of small circles to thoroughly fill all irregularities in the surface, after which the coating shall be smoothed and thinned by a series of parallel strokes.

To secure a maximum thickness of paint film upon the rivet heads and edges of plates, angles, or other rolled shapes, these areas shall be "striped" in advance of the general painting, and shortly afterward shall be given a second or "wash" coat when the general coat is applied. The paint shall be kept stirred while being applied. The paint shall be well worked into all joints and open spaces.

Paint shall be thoroughly stirred, preferably by means of mechanical mixers, before being removed from the containers, and to keep the pigments in suspension it shall be kept stirred while being applied.

All painting must be done in a neat and workmanlike manner.

On all surfaces which are inaccessible for paint brushes, the paint shall be applied with sheepskin daubers specially constructed for the purpose.

All metal coated with impure or unauthorized paint shall be thoroughly cleaned and repainted to the satisfaction of the Engineer, at the expense of the Contractor.

If it is necessary in cool weather to thin the paint in order that it shall spread more freely, this shall be done only by heating in hot water or on steam radiators.

Shop Painting: All dirt, rust, loose mill scale, grease, and other foreign matter shall be removed from the surfaces required to be shop painted, by means of an oxygen acetylene torch.

The torches to be used shall be of two general types: type one shall be used for flat surfaces, and type two shall be used for rivet heads, fittings, and other projections inaccessible to torch type number one. Torch type No. 1, multiple tip type, consists of multiple flame orifices arranged so as to give a wide flat series of neutral clear cone flames. Torch type No. 2, round tip type, consists of multiple orifices so as to give a circular series of neutral clear cone flames.

All surfaces of structural steel to be shop painted shall be flame cleaned with the proper type of torch traversed over the surface at a rate of speed necessary to dehydrate and remove loose mill scale, etc. Immediately after the application of the flame, surfaces shall be hand wire-brushed and swept clean of loose particles and dust. Cleaning by means of compressed air will not be permitted.

The conditions under which the flame cleaning of structural steel surfaces shall be undertaken shall be such that the following objectives will be attained: Removal of foreign matter, dehydration of the surface, and application of paint before recondensation of moisture on steel.

Paint shall be applied to the surface promptly after cleaning, but in no case shall paint be applied more than two hours after the flame cleaning of the surface or when the metal has absorbed sufficient heat to cause the paint to blister and produce a porous paint film or when the temperature of the steel and the surrounding air is less than 40^0F. Erection marks shall be painted upon painted surfaces. Unless otherwise noted on the drawings, all steel work, after it has been approved by the Inspector and before leaving the shop, shall be given one coat of alkyd-linseed oil primer paint.

The paint shall be carefully and thoroughly applied and well worked into all joints and open spaces. All surfaces in contact shall be cleaned (but not painted) before assembling.
All surfaces not accessible after erection, except surfaces in contact, shall receive two shop coats the second to be of the proportions specified for the first field coat and tinted as directed. All open spaces, where, in the opinion of the Engineer, water is apt to accumulate and corrosion occur because of the impossibility of painting, shall be filled thoroughly and carefully with litharge or approved substitute.

All surfaces embedded in concrete shall be cleaned but not painted. Tops of beams in contact

with concrete slabs shall be painted. Machined surfaces shall be given a heavy coat of metal lacquer or other approved coating before leaving shop. Surfaces to be welded shall not be painted until welding is completed. Where welding is to be done in the field, the shop painting

shall consist of a coat of linseed oil.

No material shall be shipped until the shop paint has dried sufficiently to preclude injury from shipping or handling.

Field Painting: After arrival at the site, all surfaces of members which will be inaccessible after erection and which are to be given the first field coast of paint in the shop shall be given two coats of paint corresponding to the second and third field coats as specified herein.

Prior to application of any coat of paint, all damage to the previous coat shall be touched up with the corresponding specified paint, each coat being allowed to dry thoroughly before the subsequent coat is applied. The Contractor shall restore any damage that may have been caused to other parts of the structure. Immediately after they have been inspected and approved, heads of field rivets shall be given a coat of paint of the proportions and quality specified for shop paint.

The underside of each fixed shoe and bed plate shall be cleaned of all foreign matter but shall not be painted.

When the erection work is complete including all riveting, straightening of bent metal, etc., all adhering rust, scale, dirt, grease or other foreign matter shall be removed from steel surfaces by means of approved power wire brush apparatus. Oil and grease shall be removed by the use of gasoline or benzine; bristle and wood fibre brushes may be used for removing loose dust; upon permission of the inspector, brushes, scrapers, chisels, hammers, and other effective means may be employed when necessary.

All painting shall be done in dry weather. The steel shall be free from moisture or frost when being painted, and the temperature of both the steel and the surrounding air shall be at least 40^0F and rising. Painting shall not be done when the metal has absorbed sufficient heat to cause the paint to blister and produce a porous paint film. Field painting shall not be started until so directed by the Engineer and in no case shall surfaces, which are liable to be damaged by concrete work be painted until after the concrete work is completed and the forms removed. As

soon as the concrete work is done to the satisfaction of the Engineer, all surfaces except as noted on the drawings and otherwise herein specified, shall be given three field coats of paint. The second and third field coats of paint shall not be applied until the preceding coat has dried thoroughly.

Paint Packages and Thinning: All paint furnished must be shipped in strong, substantial containers, plainly marked with the name and address of manufacturer. The paint shall be delivered in sealed packages and the Inspector shall be permitted to seal the packages at any time during the progress of the Work. The seals shall be broken by the Inspector only, and no paint shall be used until accepted by the Engineer. No thinning of the paint, or the addition of any material whatsoever, will be permitted except by order of the Engineer.

Rev.10/31/2011

GENERAL CONDITIONS
SECTION C - SPECIAL PROVISIONS

ARTICLE 1. DESCRIPTION OF WORK: This Contract provides for This is an emergency contract for the emergency safe-up & clean-up in connection with Hurricane Sandy at various Parks & Recreation facilities In Northern Staten Island and their adjacent areas to remove sand, debris and other material, to the satisfaction of the Agency.

The work includes but not limited to debris removal,building demoliton, raking and grading of beaches including below the Mean Low Tide Line at Swimming Beaches, removal of boardwalk ramps and reconstruction of decking, shoreline protection and pavements, installation of chain link fence and guide rails.

The above enumeration of the general scheme is not to be construed as including all items and operations necessary for the completion of work under this contract. All work done under this contract shall be as shown on the contract drawings and in strict accordance with these specifications for work and materials, and as directed by the Engineer.

ARTICLE 2. CONTRACT DRAWINGS AND SUPPLEMENTARY DRAWINGS:

The general character and typical sections and details are shown on the following drawings:

"CITY OF NEW YORK
PARKS AND RECREATION
OLMSTED CENTER
FLUSHING MEADOWS-CORONA PARK
FLUSHING, NEW YORK 11368
CONTRACT DRAWINGS FOR
EMERGENCY SAFE-UP & CLEAN-UP IN CONNECTION WITH HURRICANE SANDY AT VARIOUS PARKS & RECREATION FACILITIES IN NORTHERN STATEN ISLAND, BOROUGH OF STATEN ISLAND, KNOWN AS CONTRACT NO. RG-313M

which drawings are hereinafter referred to as the Contract Drawings or Plans.

LIST OF DRAWINGS

SHEET NO.	TITLE
C-100	COVER SHEET
C-101	OVERALL SITE PLAN
C-102	SOUTH BEACH - SECTION 1

LIST OF DRAWINGS CONTINUED

SHEET NO.	TITLE
C-103	SOUTH BEACH - SECTION 2
C-104	SOUTH BEACH - SECTION 3
C-105	SOUTH BEACH - SECTION 4
C-106	SOUTH BEACH - SECTION 5
C-107	SOUTH BEACH - SECTION 6
C-108	SOUTH BEACH - STANDARD DETAILS
C-109	MIDLAND BEACH - SECTION 7
C-110	MIDLAND BEACH - SECTION 8
C-111	MIDLAND BEACH - SECTION 9
C-112	MIDLAND BEACH - SECTION 10
C-113	MIDLAND BEACH - SECTION 11
C-114	MIDLAND BEACH - SECTION 12
L-101	BUONO BEACH
L-102	GREAT KILLS PARK - NEW DORP BEACH
L-103	GREAT KILLS PARK - CEDAR GROVE BEACH
L-104	GREAT KILLS PARK - OAKWOOD BEACH

LIST OF STANDARD DETAIL DRAWINGS APPLICABLE- BUT NOT INCLUDED
ALL DRAWINGS ARE FROM REVISION SET TYLA/R146-R7 UNLESS OTHERWISE INDICATED

SHEET NO.	TITLE	REV. DATE
1.....	Construction Sign	01/15/2006
2.....	Drainage Details - No. 1	01/15/2006
3.....	Drainage Details - No. 2	01/15/2006
4.....	Parks Leaf Manhole and Catch Basin Covers	01/15/2006
8.....	Drinking Fountain - Type "A"	01/15/2006
13.....	Pavement Details - No. 1	01/15/2006
14.....	Pavement Details - No. 2	01/15/2006
15.....	Curbs and Piers	01/15/2006
29.....	Chain Link Fence - Details	01/15/2006
30.....	Chain Link Fence - Special Conditions	01/15/2006
38.....	Barrier Rail Types "A-D"	01/15/2006

ARTICLE 3.
PROVISIONS REFERENCED WITH PROPOSAL FOR BIDS AND AGREEMENT

Pursuant to the several sections of the Proposal for Bids and the Articles of the Agreement, the Contractor shall observe the following requirements and provisions as indicated in Schedule.

SCHEDULE A
(GENERAL CONDITIONS OTHER THAN ARTICLE 22)

Reference		Item		
		Bid Bond Or Bid Deposit	****Not Required	
		Performance Bonds And	100% of Contract Price	
		Payment Security	100% of Contract Price	
		M/WBE Participation	****Not Required	
Article 14	Agreement	Date for Completion	Consecutive Calendar Days	180 days
Article 15	Agreement	Liquidated Damages	For each consecutive calendar day over completion time. See also Sec. C, Article 14 and Individual Items	$175.00
Article 17	Agreement	Sub-Contractor	Not to Exceed 50 Percent of Contract Price	
Article 21	Agreement	Retainage	Five Percent (5%) of Voucher	
Article 24	Agreement	Deposit Guarantee	One (1) Percent of Contract Price	
Article 24	Agreement	Period of Guarantee	One (1) year except where noted in the specifications.	

SCHEDULE A

(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)

(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART I. MINIMUM LIMITS AND SPECIAL CONDITIONS

Insurance indicated by a blackened box (■) or by X in a ☐ to left will be required under this contract

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
■ Commercial General Liability Art. 22.1.1	$ 1,000,000 per occurrence $ 2,000,000 aggregate (applicable separately to this **Project**) Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
■ Workers' Compensation Art. 22.1.2 ■ Disability Benefits Insurance Art. 22.1.2 ■ Employers' Liability Art. 22.1.3 ☐ Jones Act Art. 22.1.4 ☐ U.S. Longshoremen's and Harbor Workers Compensation Act Art. 22.1.4	Workers' Compensation: Statutory per New York State law without regard to jurisdiction Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction Employers' Liability: $1,000,000 each accident
☐ Builders' Risk Art. 22.1.5	☐ Required – 100% Total Bid Amount ☐ Required – 100% Bid Amt. For Item(s)

SCHEDULE A
(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)
(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)
(PART I CONTINUED)

Insurance indicated by a blackened box (■) or by (X) in ☐ to left will be required under this contract

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
■ Comprehensive Business Auto Coverage Art. 22.1.6	$ 1,000,000 per accident If vehicles are used for transporting hazardous materials, the **Contractor** shall provide pollution liability broadened coverage for covered autos (endorsement CA 99 48) as well as proof of MCS 90.
■ Pollution/Environmental Liability Art. 22.1.7	$ 1,000,000 per occurrence $ 2,000,000 aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2._____ 3._____
☐ Marine Protection and Indemnity Art. 22.1.8(a)	$_____ per occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2._____ 3._____

SCHEDULE A
(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)
(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)
(PART I CONTINUED)

Insurance indicated by a blackened box (■) or by (X) in ☐ to left will be required under this contract

☐ Ship Repairers Legal Liability Art. 22.1.8(b)	$_____ each occurrence [Contracting agency to fill in total value of City vessels involved]
☐ Collision Liability/ Towers Liability Art. 22.1.8(c)	$_____ per occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Marine Pollution Liability Art. 22.1.8(d)	$_____ each occurrence Additional Insureds: 1. City of New York, including its officials and employees, and 2._____ 3._____
[OTHER] Art. 22.1.9 ☐ Railroad Protective Liability_____	$_____ per occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____

SCHEDULE A
(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)
(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART II. BROKERS CERTIFICATION

(See page 121)

PART III. ADDRESS OF COMMISSIONER

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

ARTICLE 4. CHANGES TO CONTRACT

Changes to design layout or materials specified in this contract shall not be made without the written approval of N.Y.C. Department of Parks and Recreation, Division of Design and shall be in accordance with Chapter VII article 32 and 33 of the Agreement and General Conditions, Section A - General Provisions, Article 1.

ARTICLE 5. TESTING AND INSPECTING MATERIAL

All materials and methods of construction subject to testing and inspection shall be under the direct supervision of a Professional Engineer, licensed by the State of New York.

Testing and Inspecting-NYC-Department of Buildings Requirements: The preparation, submission and filing of all necessary forms and amendments so that a building permit, a Certificate of Occupancy and/or letters of compliance may be issued by the NYC-Department of Buildings shall be performed by a Professional Engineer, licensed by the State of New York or a Professional Expediter. Where third party tests and inspections (including controlled inspections) of materials, equipment and construction are required by "The Building Code of the City of New York", as amended to date, and there is an obligation to avoid conflict of interest, the Agency will pay Inspectors and DOB approved testing laboratories directly. Where special inspectors are required, the Contractor is responsible for coordinating inspections and obtaining permits.

Expediting: All costs for hiring a Professional Expediter, as required for filing as stated under this Article, shall be borne by the Contractor and shall be deemed to be included in the contract price, unless otherwise stated.

Testing and Inspecting: For materials, equipment and construction not subject to NYC-Department of Buildings approval: All costs for laboratory testing (including the deliveries and postage of materials), as stated under this Article, shall be borne by the Contractor and shall be deemed to be included in the contract price, unless otherwise stated. See also Section C Article 11 "Special Requirements for various types of Submittals," (d) Test Reports.

All materials requiring testing as set forth in these specifications, as ordered by the Engineer shall be performed by an approved independent testing laboratory. Certifying and testing the specified materials and equipment shall conform to General Conditions, Section A- General Provisions, Article 5 "Materials and Equipment".

ARTICLE 6. SCHEDULING OF WORK AND MATERIALS

In accordance with Chapter III, Article 9 of the Contract Agreement, the Contractor must submit a progress schedule within 15 days after the notice to proceed of this

contract. In order to execute this contract in an orderly and expeditious manner and to avoid delay or impede the progress of the work, the Contractor within these 15 days shall contact the suppliers and manufacturers of all the required materials to ascertain the delivery lag time. The delivery lag time shall indicate the duration of time from the date the material is ordered to the time the material is delivered to the site. The Contractor shall indicate on his progress schedule proposed ordering dates and proposed installation dates of all materials in which the delivery lag time exceeds 30 days.

ARTICLE 7. EXTRA WORK PERFORMED AS OUTLINED IN CHAPTER VI, ARTICLE 25, 26, 27 and 28 OF THE AGREEMENT

These provisions supplement Chapter VI of the Agreement. Upon request by the Engineer, the Contractor shall promptly prepare estimates of cost for changes in the Work. The estimates shall be broken down into labor materials and equipment units for both prime Contractors and their Sub-Contractors, and in sufficient detail to provide the Engineer with all required information.

Prior to the start of work orders, the following should be investigated by the Contractor:

1. Type and Size of Equipment - The Contractor shall only rent equipment that conforms to the needs of the job. Any over-sized equipment rented will be paid for at a rate equal to the type of equipment that would normally be needed to adequately perform the Work.

2. Rental Equipment - Determine if there is any equipment that will have to be rented and estimate the duration of the rental period. All equipment and materials rented shall be at the most economical rate available, in accordance with prevailing rental rates in the industry. Quotations from several rental firms may be required to establish prevailing rates. If the rental equipment cost should exceed the purchase price of the equipment to be rented, the Contractor should so advise the Engineer of this in writing.

   If it is determined that the purchase price is equal to or less than the rental cost, then the Contractor may be directed to purchase the equipment and at the conclusion of the Work, turn this equipment over to the Agency.

3. Contractor Owned Equipment and Material Cost Allowance
   a. Cost allowance for on-site equipment owned by the Contractor shall be reimbursed at 75% of the monthly rates provided by the appropriate edition of "Rental Rates and Specifications for Construction Equipment Book" ("Green Book") published by Associated Equipment Distributors, prorated hourly for the actual hours used (subject to the restrictions of Paragraph d. below).

   b. Equipment brought to the site solely for the performance of extra work shall

be reimbursed at 75% of the "Green Book" rates.

c. Equipment brought to the site solely for the performance of extra work when the subject equipment is on "standby" shall be reimbursed at 33 1/3% of the "Green Book" monthly rates, prorated daily, plus the reasonable cost of move in and move out.

d. For multiple shift utilization, reimbursement shall be calculated as follows:
First Shift- .75 of "Green Book" rental rates
Second Shift - .60 x first shift rate
Third Shift - .40 x first shift rate
The maximum reimbursement for any twenty-four-- (24) hour period shall be calculated at twice (2x) the daily rate as calculated in Paragraph a. above.

e. The aforementioned reimbursement schedules shall be applicable only to serviceable equipment that is capable of efficiently performing its intended on-site function in accordance with the additional work requirements.

f. The cost of equipment characterized as "small tools" is deemed to be included in the Contractor's overhead factor and shall not be eligible for separate reimbursement, whether Contractor-owned or leased separately. This type of equipment generally encompasses items that are ordinarily required for the performance of the worker's job function, and includes but is not limited to, equipment which ordinarily has no licensing, insurance or substantive storage costs associated with it, such as circular and chain saws, impact drills, threaders, benders, wrenches, socket tools, etc.

g. In establishing rental payments for materials (e.g. scaffolding, plating or sheeting), consideration may be given to the actual or the estimated life cycle of the material for use on other projects or rental rates may be established on the basis of purchase or salvage value whichever is less.

4. Material Purchases - Contractor must demonstrate that at least three (3) prices were obtained for material purchases and that the lowest price was used.

5. Sub-Contracts - If work must be sub-contracted out, three (3) quotes must be obtained with the lowest quotation used.

6. Surplus Material - Any material not incorporated in the Work, surplus or re-usable, shall become the property of the City of New York, unless a reasonable salvage value is offered.

ARTICLE 8. PARTIAL PAYMENTS FOR MATERIALS IN ADVANCE OF THEIR INCORPORATION IN THE WORK PURSUANT TO ARTICLE 42 OF THE "AGREEMENT"

In order to better insure the availability of materials, fixtures and equipment when needed for the work, the Commissioner may authorize partial payment for certain materials, fixtures and equipment, prior to their incorporation in the work, but only in strict accordance with and subject to all the terms and conditions set forth in the following sub-divisions numbered 1 to 16 inclusive, unless another method of payment is elsewhere provided in the specifications for specified materials, fixtures or equipment.

1. The contractor shall submit to the Commissioner a written request, in quadruplicate, for payment for materials purchased or to be purchased for which he desires to be paid prior to their actual incorporation in the work. The request shall be accompanied by a schedule of the types and quantities of materials, and shall state whether such materials are to be stored on or off the site.

2. When the materials are to be stored off the site, they shall be stored at a place other than the Contractor's premises (except with the written consent of the Commissioner) and under the conditions prescribed or approved by the Commissioner. The Contractor shall set apart and separately store at the place or places of storage all materials and shall clearly mark same "PROPERTY OF THE CITY OF NEW YORK" and further, shall not at any time move any of said materials to another off-site place of storage without the prior written consent of the Commissioner. Materials may be removed from their place of storage off the site for incorporation in the work upon approval of the Resident Engineer.

3. Where the materials are to be stored at the site, they shall be stored at such locations as shall be designated by the Resident Engineer and only in such quantities as, in the opinion of the Resident Engineer, will not interfere with the proper performance of the work by the Contractor or by other Contractors then engaged in performing work on the site. Such materials shall not be removed from their place of storage on the site except for incorporation in the work, without the approval of the Resident Engineer.

4. <u>INSURANCE REQUIREMENTS FOR STORED MATERIALS:</u>

   a. STORAGE OFF SITE - Where the materials are stored off the site and until time as they are incorporated in the work, the Contractor shall fully insure such materials against any and all risks of destruction, damage or loss including but not limited to fire, theft, and any other casualty or happening. The policy of insurance shall be payable to the City of New York. It shall be in such terms and amounts as shall be approved by the Commissioner and shall be placed with a company duly licensed to do business in the State of New York. The Contractor shall deliver the original and one copy of such policy or policies marked "Fully Paid" to the Commissioner.

b. STORAGE ON THE SITE - Where the materials are stored at the site, the Contractor shall furnish satisfactory evidence to the Commissioner that they are properly insured against loss, by endorsements or otherwise, under the Policy or Policies of insurance obtained by the Contractor to cover losses to materials owned or installed by him. The policy of insurance shall cover fire and extended coverage against windstorm, hail, explosion and riot attending a strike, civil commotion, aircraft, vehicles and smoke.

5. All costs, charges and expenses arising out of the storage of such materials, shall be paid by the Contractor and the City hereby reserves the right to retain out of any partial or final payment made under the contract an amount sufficient to cover such costs, charges and expenses with the understanding that the City shall have and may exercise any and all other remedies at law for the recovery of such cost, charges and expenses. There shall be no increase in the contract price for such costs, charges and expenses and the Contractor shall not make any claim or demand for compensation there for.

6. The Contractor shall pay any and all costs of handling and delivery of materials, to the place of storage and from the place of storage to the site of the work; and the City shall have the right to retain from any partial or final payment an amount sufficient to cover the cost of such handling and delivery.

7. In the event that the whole or any part of these materials are lost, damaged or destroyed in advance of their satisfactory incorporation in the work, the Contractor at his own cost, shall replace such losses, damaged or destroyed materials of the same character and quality. The City will reimburse the Contractor for the cost of the replaced materials to the extent, and only to the extent, of the moneys actually received by the City under the policies of insurance hereinbefore referred to. Until such time as the materials are replaced, the City will deduct from the value of the stored materials or from any other money due under the Contract, the amount paid by the City for such rejected or improperly incorporated materials.

8. Should any of the materials paid for by the City hereunder be subsequently rejected or incorporated in the work in a manner or by method not in accordance with the contract and specifications, the Contractor shall remove and replace such defective or improperly incorporated material with materials complying with the contract and specifications. Until such materials are replaced, the City will deduct from the value of the stored materials or from any other money due the Contractor, the amount paid by the City for such rejected or improperly incorporated materials.

9. Payments for the cost of materials made hereunder shall not be deemed to be an acceptance of such materials as being in accordance with the Contract Documents, and the Contractor always retains and must comply with his duty to deliver to the

site and properly incorporate in the work only materials which comply with the Contract Documents.

10. Contractor shall retain any and all risks in connection with any damage, destruction or loss of the materials paid for hereunder to the time of delivery of the same to the site of the work and their proper incorporation in the work in accordance with the Contract Documents.

11. The Contractor shall comply with all laws and the regulations of any governmental body or agency pertaining to the priority purchase, allocation and use of the materials.

12. When requesting payment for such materials, the Contractor shall submit with the partial estimate, duly authenticated documents of title, such as bills of sale, invoices or warehouse receipts, all in quadruplicate. The executed bills of sale shall transfer title to the materials from the Contract to the City (in the event that the invoices state that the material has been purchased by a Sub-Contractor, bills of sale in quadruplicate will also is required transferring title to the materials from Sub-Contractor to the Contractor).

13. Where the Contractor, with the approval of the Commissioner has purchased unusually large quantities of materials in order to assure their availability for the work, the Commissioner at his option, may waive the requirements of paragraph "12" provided the Contractor furnishes evidence in the form of an affidavit in quadruplicate, and such other proof as the Commissioner may require, that he is the sole owner of such materials and has purchased them free and clear of all liens and other encumbrances. In such event, the Contractor shall pay for such materials and submit proof thereof, in the same manner as provided in paragraph "12" hereof, within seven (7) days after receipt of payment therefor from the Comptroller. Failure on the part of the Contractor to submit satisfactory evidence that he has paid in full for all such materials shall preclude him from payments under Contract.

14. The Contractor shall include in each succeeding partial estimate requisition a summary of materials stored which shall set forth the quantity and value of materials in storage, on or off the site, at the end of each preceding estimate period; the amount removed for incorporation in the work; the quantity and value of materials delivered during the current period and the total value of materials on hand for which payment thereof will be included in the current payment estimate.

15. Upon proof to the satisfaction of the Commissioner of the actual cost of such materials and upon submission of proper proof of title as required under paragraph "12" or "13" hereof, payment will be made therefore to the extent of 85% provided, however, that the cost so verified, established and approved shall not exceed the estimated cost of such materials included in the approved detailed breakdown estimate submitted in accordance with Article 40 of the Agreement; if

it does, the City will pay only 85% approved estimated cost.

16. Upon the incorporation in the work of any such materials, which have been paid for in advance of such incorporation in accordance with the foregoing provisions, payment will be made for such materials incorporated in the work pursuant to Article 42 or Article 45 of the Agreement, less any sums paid pursuant to paragraph "15" herein.

ARTICLE 9. AS-BUILT DRAWINGS

Unless waived by the Engineer, the Contractor shall provide and maintain, at his own expense, one set of black and white prints of the Contract Drawings on the site. He shall designate a responsible person to maintain a currently up-to-date record on these prints showing all changes, additions or omissions made during the construction, without regard to how they were initiated. Upon completion of the work, the information on these drawings shall be incorporated into a set of "As-Built" drawings, prepared by the Contractor. These changes, additions and/or deletions shall be highlighted on the final submission with a graphic "bubble".

Acceptable submittals of "As-Built" drawings shall be ink (plotted on an ink jet printer) on minimum 4 mil thick Mylar, 30" x 42" in size. The Agency will not accept electrostatic (i.e. xerographic) or other processes that utilize powdered toners or diazo process reproductions to generate original mylar drawing submissions. The camera photo wash-off mylar or fixed line photo processes may be substituted in lieu of original ink drawings.

In addition to the mylar drawings the Agency requires the submission of "As-Built" drawings in Auto-Cad (E-Transmit format for each drawing) and PDF files. To request digital drawing source files, the Contractor must submit a completed "Contractor Auto-CAD Data Request Form" with a new CD-RW, in a square plastic jewel case, to the Resident Engineer. The CD-RW with the approved files will be returned to the Contractor with the requested digital files. Upon completion of the "As-Built" drawings the contractor shall return the CD-RW containing the "As-Built" information prepared to DPR CAD Standards in the same format/version. The Contractor shall also provide PDF files of the "As-Built" drawings. Both the Auto-CAD (E-Transmit) and PDF files shall be labeled with the same file names and drawing titles.

"As-Built" drawings of the construction plans including Final Surveys (when required), Irrigation Plans, etc. shall be submitted in one package including mylars and electronic files. For Multi-Site projects the "As-Built" drawings shall be submitted in one package containing documentation of all the sites, including mylars and electronic files. Separate CD's are not required for each site and it is preferred that wherever possible all data be submitted on one CD.

Where the Agency does not have source documents in digital format the Contractor shall:

-Prepare As-Built drawings in Auto-CAD (E-Transmit) and PDF formats
-Utilize the version of Auto-Cad currently in use by the Agency
-Utilize the Agency CAD standards
-Submit a CD-RW containing Auto-CAD (E-Transmit) and PDF formats as well as ink on mylar drawings, or acceptable substitutes as noted above.

The final "As-Built" drawings and CD-RW shall contain the following on each drawing and digital file:
-"Constructed By" followed by the Contracting firms name, address and telephone number
-"Constructed For": The City of New York, Department of Parks & Recreation
-The Full and Complete Project Title
-Contract Number (i.e. M010-211M, Q324-112M)
-Drawing Title (i.e. Layout Plan, Electrical Plot Plan, Roof Drainage). Using only the term "As-Built" in the drawing title without providing the detail of what the "as-built" drawing represents is not acceptable.
-Drawing Date
-The words "As-Built"
-The statement "I certify that this as-built drawing is complete and accurate."
-The Contractors signature (On original mylar only)

Where the project was constructed as designed, the Contractor shall submit on the company's stationary, an affidavit addressed to the Chief Engineer with the following:

-The full and complete project title
-Contract number
-Date
-Statement that the project was constructed as designed
-Contractor's Signature

The "As-Built" drawings and CD-RW or affidavit must be submitted to the Agency within one (1) month of the Final Inspection for verification by the Agency Resident. Acceptance of the "As-built" drawings, CD-RW and Affidavit is subject to this verification.

ARTICLE 10. CONTRACTOR'S EMERGENCY TELEPHONE

Within 10 days of the award of this contract, the contractor shall furnish 24-hour home telephone numbers of at least three responsible members or employees of his firm who can be reached in times of emergencies resulting out of or in connection with the work to be performed under this Contract.

ARTICLE 11. SUBMITTALS

Submittals by the Contractor shall be made as required to the Coordinator of Submittals of the Department of Parks and Recreation ("the COS") for approval or for record as specified and identified, and to ensure compliance with these Documents.

DEFINITION:
Submittals include, but are not limited to: shop drawings; samples; catalogue cuts; manufacturers' manuals regarding installation, operation and maintenance; test reports; certificates, warranties and guarantees.

All submittals to the COS shall be accompanied by a dated transmittal sheet enumerating the contents of the submittal, and bearing the name, address and telephone number of the Contractor, and the name of the Contractor's project contact person.

WHEN REQUIRED:
Shop drawings and other submittals shall be furnished only when specifically required in the detailed specifications for that Item, or when there is any departure from the Department of Parks and Recreation Standard Details, Contract Drawings or Technical Specifications.

If the Contract Plans and/or Specifications do not fully detail or describe the Item to be furnished, in all respects, shop drawings and other submittals furnished for approval prior to the start of any fabrication.

EXCEPTION to REQUIREMENTS:

The requirement for the furnishing of shop drawings and other submittals will be waived by the Project Manager when the equipment, apparatus, device or material to be furnished conforms in all respects to the Contract Plans and the Specifications.

GENERAL REQUIREMENTS for SUBMITTALS:

(a) All submittals shall be sent directly to:

[redacted]

(b) The Contractor shall fully identify each submittal. Name the project, Contractor, each Sub-Contractor and Supplier; name of each material and its' source, finish, specifications section or Number and location of its use in the contract. The Contractor shall employ the terminology and numbering system of the specification and/or plans.

(c) The Contractor shall fully check and approve each submittal for completeness and conformance with these documents. Fully check and approve all material quantities, sizes, details, fabricating dimensions, temporary erection connections **or** closures, tolerances, and the proper fit or mating with adjacent materials. Establish critical dimensions by means of field measurements taken from the work; arrange for fabrication to suit these dimensions and to fit actual construction conditions. Fully check and approve all information pertaining to fabrication processes and techniques of construction.

(d) The Contractor shall identify deviations from the Contract Drawings and Specifications and call attention to them by supplying a list of such deviations; hereafter know as the List of Deviations.

(e) Required Manufacturers of materials to provide installation specifications for the exact assemblies and construction as shown and required by the documents. Require Manufacturers of material to provide pertinent data establishing the compatibility and performance of their materials under the exact conditions shown and as required by the documents.

(f) Equivalent Quality of Materials- "Approved Equal"
Whenever a material, article, or piece of equipment is identified on the plans in the specifications by reference to manufacturers or vendors' names, catalogue number or make, said identification is intended to establish a standard. Any material, articles or equipment of other manufacturers and vendors which perform adequately the duties required by the general design may be considered equally acceptable provided that:

1- In the opinion of the DPR, the material, article or equipment so proposed is of equal quality, substance and function and
2 - The Contractor shall not provide or install any such proposed material, article or equipment without the prior written approval of the Project Manager.

SPECIAL REQUIREMENTS for VARIOUS TYPES of SUBMITTALS:

(a) Shop Drawings - Provide shop drawings showing the relationship of subject work to all related structures and contiguous work. Show, identify and give dimensions of all external connections and attachments. Include notations on all physical, mechanical and electrical characteristics for products and equipment, as appropriate, for identification and coordination. Suppliers' standard drawings showing components may be submitted only if they clearly show exact items required as above. Cross-reference and identify related work. Make simultaneous submission of closely related items whether of the same or separate suppliers. Provide composite shop drawings showing work of separate suppliers, when required, to ensure full coordination and proper fitting of the work, and when so

directed by the Project Manager and/or Engineer.

The term "By Others" is not acceptable in the submission of shop drawings.

THE CONTRACTOR SHALL FURNISH 6 (SIX) PRINTS OF ALL REQUIRED SHOP DRAWINGS.

(b) Brochures (including catalogue cuts, schedules and manufacturers' installation instructions) - The exact item submitted for approval must be clearly shown identified. When several pages are required to show an assembly, each page and item shall be clearly marked and the brochure shall be indexed for ready reference.

THE CONTRACTOR SHALL FURNISH BROCHURE SUBMITTALS IN THE QUANTITIES REQUIRED AS DETAILED IN THE SPECIFICATIONS FOR THAT SPECIFIC ITEM. IF A QUANTITY IS NOT NOTED ELSEWHERE, THEN 6 (SIX) COPIES SHALL BE REQUIRED.

(c) Samples - Samples shall reflect characteristics of the materials and finishes specified. Samples of any material to be used in the work must be furnished, whether samples are required in the specifications or not, upon request by the Engineer. All samples submitted must have all identifying information as specified above on a securely attached label. Pack samples to ensure arrival in prime condition. Prepay all shipping charges to the address designated by the COS. Samples will be retained unless otherwise specified. (See Section "A" of this Agreement).

THE CONTRACTOR SHALL FURNISH SAMPLES IN QUANTITY REQUIRED IN DETAILED SPECIFICATION. IF A QUANTITY IS NOT LISTED ELSEWHERE, THEN 2 (TWO) WILL BE REQUIRED.

(d) Test Reports (includes design mixes and material tests) Provide complete technical reports of laboratory test results, in acceptable form, showing all information necessary to establish the quality of performance of the work tested. Provide a statement on whether the mixes, tests, etc., conform to the specification requirements.

The above requirements shall not restrict or affect DPR's right to test materials itself.

When materials or manufactured products comprise such small quantities that it will not be practical to make physical tests or chemical analyses directly on the products furnished, a certificate stating the results of such tests or analyses of similar materials which were concurrently produced may, at the discretion of the DPR, be considered as the basis for acceptance of such materials or manufactured products.

If, in making any test, it is ascertained by DPR that the material or equipment does not comply with the contract documents, the Contractor will be so-notified and directed to refrain from delivering said material or equipment, or to promptly remove it from the site or from the work, and replace it with acceptable material without cost to the City.

(e) Certificates and Labels - When so required, the Contractor shall furnish to the COS authoritative evidence in the form of certificates of manufacture that the materials to be used in the work have been manufactured and tested in conformity with the contract documents. These certificates shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product, or on similar products being fabricated by the manufacturer.

All such Certificates shall be on the letterhead of the certifying party, and shall be signed by an authorized representative thereof.

THE CONTRACTOR SHALL PROVIDE THE COS WITH 6 (SIX) COPIES OF ALL SUCH CERTIFICATES.

When materials are specified to conform to any standard, the materials delivered to the Site shall bear manufacturer's labels stating that the materials meet such standards.

(f) Warranties and Guarantees - The Contractor shall obtain all manufacturers' warranties and guarantees of all equipment and materials.

All such Warranties and Guarantees shall be collected in 4 (four) sets, each set secured in a binder and given to the COS prior to acceptance of the material or equipment for project use.

The COS shall then distribute these bound sets as follows:
1. Map file
2. Borough Foreman of Mechanics
3. DPR Resident Engineer (for delivery to site)
4. DPR Design Division Project Manager

The delivery of such manufacturers' warranties and guarantees shall in no respect relieve the Contractor from any obligation under the preceding provisions of these documents.

Upon installation or application of all such warranted or guaranteed equipment or materials, the Contractor shall provide the COS with:

Documentation of the date of installation or application, and telephone numbers

of the manufacturers' distributor(s) authorized representative(s).

(g) Operations and Maintenance Manuals - The Contractor shall supply copies of manufacturer's literature for new equipment. The literature shall include instructions for normal operation, normal preventive maintenance schedules, parts breakdown and diagnostics, and a parts list for reordering .

All such manufacturer's literature shall be collated in 4 (four) sets, each set secured in a binder and given to the COS prior to final inspection.

The COS shall distribute these bound sets as follows:
1. Map file
2. Borough Foreman of Mechanics
3. DPR Resident Engineer (for delivery to site)
4. DPR Design Division Project Manager

APPROVAL PROCEDURE:

Only those items highlighted, labeled, and described in the List of Deviations [See "General Requirements for All Submittals" section, paragraph (d)] will be reviewed by the Project Manager. Any changes or deviations from the Contract Plans and Specifications appearing in the submitted work which are not so highlighted; labeled and listed will be deemed a material breach of this Contract. No approval for changes or deviations from the Contract Plans and Specifications can be given unless those changes or deviations are highlighted on the shop drawings and other submittals, as well as labeled and described in the List of Deviations. No oral modifications accepted.

Subsequently, submittals will be stamped or marked with one of the following; indicating whether or not any further actions will be required of the Contractor:

(a) APPROVED - If the submittal is satisfactory, the Project Manager will stamp or mark the submittal "APPROVED", date it and return it to the Contractor. The Contractor may then proceed with fabrication.

(b) APPROVED AS NOTED - If the submittal requires minor corrections, the Project Manager will note the corrections on the submittal, stamp or mark it "APPROVED AS NOTED", date it and return it to the Contractor.

Fabrication may proceed only after incorporating the noted corrections. Any questions or objections to such corrections shall be communicated to the COS immediately upon receipt by the Contractor of the returned submittal. Absence of such communication within 5 (five) working days shall indicate the Contractor's acceptance of and compliance with the noted corrections.

(c) APPROVED AS NOTED: REVISE & RESUBMIT - Revise or correct the submittal or drawings and resubmit to the COS.

Fabrication may proceed if the Contractor accepts and incorporates the noted corrections. However, if the Contractor proceeds contrary to correction, any rework required to effectuate conformance with the corrections shall be done at the Contractor's expense.

In making corrections on submittals for resubmission, the Contractor shall make no changes, beyond those noted or required, unless such new or revised information is clearly identified and delineated on each resubmission as described in the section on List of Deviations.

(d) REJECTED: REVISE & RESUBMIT - If the submittal is unsatisfactory in the opinion of the Project Manager, the submittal will be stamped or marked "REJECTED" and returned to the Contractor. Unsatisfactory factory submittals shall be corrected and redrawn by the Contractor and resubmitted to the COS in accordance with the above procedures.

The Contractor shall not proceed with that part of the work covered by the submittal, including purchasing, fabrication, delivery, or other activity until the revised resubmittal is approved by the Project Manager.

(e) ACTION NOT REQUIRED - Where a submittal is primarily for information or record purposes, the accompanying transmittal shall be xerocopied, stamped or marked "ACTION NOT REQUIRED" by the Project Manager, and returned to the Contractor.

The Department of Parks and Recreation will make every effort to review submittals and respond to the Contractor in a timely manner.

ARTICLE 12. PHOTOGRAPHIC DOCUMENTATION -
Project Progress Photographs for Construction Division Records

The Contractor shall engage the Professional Services of an experienced photographer, as approved by the Construction Division Borough Director, to take Photographs of the Site and the Work being performed under this Contract, for Construction Division Records. The photographic CDs and prints shall be considered "work made for hire" under applicable provisions of the Copyright Act, and the City shall be the copyright owner thereof and of all aspects, elements and components thereof in which copyright protection might subsist. To the extent that such materials do not qualify as "work made for hire", the contractor hereby irrevocably transfers, assigns and conveys exclusive copyright ownership in and to such materials to the City, free and clear of any liens, claims or other encumbrances. The Photographs shall be taken prior to, during, and at the completion of the Work, at four (4) separate Stages, throughout the Contract Duration. The locations from which the photographs are taken shall be subject to the direction and approval of the Resident Engineer. The photographs taken shall be clear

and crisp, and sufficient to record the conditions existing prior to the Commencement of Work and thereafter, at one-third (1/3) completion intervals, as directed by the Agency.

The four (4) distinct times at which Photographs shall be taken are as follows:

I. Prior to Construction Start
II. At 1/3 Completion
III. At 2/3 Completion
IV. After Final Completion

At each of these four (4) Stages, the Contractor shall submit to D.P.R. Construction Division, all of the following:

1. CD-R — Four (4) CD-Rs, one from each stage shall be provided.

2. Prints — (4" x 6" at Phases II and III and 8" x 10" and Phases I and IV) standard single weight photographic paper, with smooth matte (semi-gloss) finish. Photographs shall have a minimum resolution of 600 dpi.

3. Quantity: — Thirty-six (36) Exposures, if Engineers Estimate for Contract is over $500,000.00.

Twenty-four (24) Exposures, if Engineers Estimate for Contract is over $100,000.00 and under $500,000.00.

Twelve (12) Exposures, if Engineers Estimate for Contract is under $100,000.00.

All photographs shall be digital or 35mm, and in Color. If the photographs are in 35mm format, a CD-R shall be created from the negatives and both the negatives and the CD-R shall be submitted. Prints shall be labeled in sequence with a permanent identification number inscribed thereon. On the CD-R files shall be named in sequence and with an identification number. An accurate date stamp shall appear on each photograph.

In addition to the proper identification numbers, Prints shall be further identified and concisely labeled on the face, by appropriate permanent markings or a permanent label consisting of the following information:

a) Contractor Name:
b) Photographer Name:
c) N.Y.C. Dept. of Parks and Recreation
d) Contract Number:
e) Capital Project Title:
f) Photo Number:
g) Date:
h) Description of the Specific Exposure/View, indicating location of

camera (ie. Looking West on 12th Street, Between Avenues A and B, at Fence, from Play Equipment.)

A corresponding Log Sheet shall be provided and submitted with the CD and Prints in the same format as the Identification Labels.

Prints shall be mounted in approved archival quality photo pages of clear Polyethylene Envelope Sleeves, with pre-punched holes for 3-ring binders, as directed by the Engineer. In addition to the aforementioned CD and Prints, the Contractor shall also furnish hard-back cloth binders to hold all sets of prints.

Each CD shall be submitted in a clear jewel case. The CD shall be labeled with the following typewritten information:

a) Contractor Name
b) Contract Number
c) Capital Project Title
d) Date

Delivery: Contractor shall deliver the prints flat, along with all other materials directly to D.P.R. Construction Resident Engineer.

No direct payment will be made for processing, labeling, mounting and delivering Photographs and CD's, but the cost thereof shall be deemed included in the prices bid for the various Items of this Contract.

Failure to supply pre-construction and subsequent project progress photographic documentation when required shall result in the City taking a credit in the sum of $4,000.00. Partial satisfaction of this requirement will result in proportional credits being taken against the $4,000.00 amount.

ARTICLE 13. PERMITS, ETC.

Unless otherwise stated, the Contractor shall obtain and pay for all permits, licenses, certificates, inspections and other legal fees required in connection with the work. The above includes the payment of all building purpose charges or water charges imposed by the Department of Environment Protection.

IF CONDITIONS DO NOT ALLOW THE USE OF NEW YORK CITY WATER SOURCES, THE CONTRACTOR MUST OBTAIN HIS OWN SOURCE OF WATER. No direct payment shall be made for water obtained by the Contractor from other than City sources, but the cost therefore shall be deemed included in the various items of the contract.

In the case of a multi-contract project, the General Contractor for the Construction Contract shall be responsible for and shall pay for water charges for the entire project.

ARTICLE 14. TREE WORK

1. PROTECTION OF EXISTING TREES:

NOTIFICATION: The Contractor shall notify the Arboriculture and Horticulture office by email at Capital.Arb-Hort@parks.nyc.gov a minimum of 48 hours in advance of any work on or impacting existing trees as described in this Article and to formulate a Tree Protection Plan where none exists.

A Tree Protection Plan shall be formulated and/or finalized in consultation with the Resident Engineer, Landscape Architectural Designer, Capital Arborist and the Director of Arboriculture and Horticulture (A&H) or their designated authorized representative.

This plan should include, but not necessarily be limited to, the location of temporary wooden tree guards, construction fence, temporary snow fence boundary, range fencing, micro tunneling, hand and/or pneumatic excavation, soil compaction prevention and mitigation requirements and a pruning and fertilization schedule. In addition, the plan should address the Contractor's operations, including designated staging areas, site access and stockpiling of materials.

The Tree Protection Zone (TPZ) shall be defined as the area within the drip line of existing trees, unless otherwise shown on the Tree Protection Plan included in the bid documents.

Mandatory provisions of the tree protection plan always include, but are not limited to, the following provisions:

The Contractor shall not be permitted to park vehicles or equipment or to stockpile materials of any nature within the TPZ in order to minimize surface and subsurface root damage and soil compaction. This directive applies to all trees where the drip line is either fully or partially in the contract limit line.

All tree pruning and tree removal is to be performed by an arborist holding certification from the International Society of Arboriculture (ISA) or equivalent education and experience.

All contact between equipment and overhead tree limbs should be avoided. Bending or breakage of limbs is prohibited. If clearance pruning is proposed, it shall not be performed without the written permission from the Director of A&H or their designated representative and then shall only be performed with professional equipment as per the Agency's standards and specifications for such work.

All trees within the contract limit line are to receive at least one (1") inch (the equivalent of 750 gallons of water per 1000 square feet of Tree Protection Zone)

of water per week between the months of March and October as directed by the Director of A&H or their designated representative. If rainwater in any given week is below this quantity, the Contractor must supplement the amount received by utilizing soaker hoses or as directed by the Agency. If a water source is unavailable at the site, then the Contractor must provide a water truck to apply the requisite amount of water.

Where excavation is performed within the TPZ for removal of existing features or installation of new work, the excavated area shall be backfilled immediately and/or roots shall be kept constantly moist with burlap covered with white plastic and checked a minimum of two (2) times a day, once in the morning and once in the afternoon, for a maximum of forty-eight (48) hours, until backfill is complete as directed by the Director of A&H or their designated representative. If directed, soaker hoses shall be installed to facilitate properly moist conditions. No pooling of water or continuous running water shall occur within the TPZ other than that during the irrigation process.

The Contractor shall exercise extreme care in removing concrete or asphalt within the TPZ, lifting rather than dragging paving pieces. Tools and equipment for this activity shall be approved by the Director of A&H or their designated represented prior to the start of excavation.

Any excavation or trenching within a TPZ or elsewhere on the site as designated by the Director of A&H or their designated representative shall be performed by hand or pneumatic excavation, or micro tunneling.

If directed, the critical root zone of a tree shall be covered with wood chips to a depth of at least six (6) inches, with plywood or ground protection mats, or a combination thereof, in order to protect roots from damage caused by heavy equipment. Such covering shall be maintained during the course of construction and removed after the end of construction. Removal shall be by hand or as specified by the Director of A&H or their designated representative.

Tree guards with tree wraps and tree protection fences shall follow Parks specifications and standards and shall be installed as shown on the Tree Protection Plan. Fences and tree guards shall be maintained for the duration of the contract and shall not be removed or moved without written permission of the Director of A&H or their designated representative.

All tree protection fenced zones shall be so indicated with signage posted visibly on the fenced in area. Wording shall read "Tree Protection Zone", font to be Helvetica bold or Arial Black, 72 point minimum letters. Sign shall be 8 ½" x 11" in size, color of paper to be orange, laminated and fixed to fencing as directed. Signs shall be fixed to fence at thirty (30") foot intervals. Signs will be provided and installed by the Contractor. Contractor shall be responsible for maintaining signs for the duration of the Contract.

Plants shall not be placed within 3 feet of the tree trunk unless approved and all planting beds within TPZ can only be installed in the presence of the Director of A&H or their designated representative.

All excavation and plant installation within the TPZ shall be performed by hand, with minimal soil disturbance. No roots over 1" in diameter shall be cut without the written authorization of the Director of A&H or their designated representative.

TREE PROTECTION DEFICIENCIES-Failure to follow the tree protection guidelines in this Article 14 may result in assessment of liquidated damages. When a tree protection deficiency, as determined by the Director of A&H or their designated representative is identified, it must be remedied within 24 hours of notification by the Agency. Failure to correct the deficiency within this timeframe will result in a liquidated damages assessment of $300 for each day, or part thereof, that the tree protection deficiency is not remedied.

REMEDIATION – In the event of damage to trees resulting from the Contractor's work or failure to follow Article 14 guidelines, as determined by the Director of A&H or their designated representative, any of the following site restoration or mitigation measures may be required by the Agency. These measures shall be assumed at the expense of the Contractor and shall only be performed with the approval and under the direction of the Director of A&H or their designated representative.

a. Soil analysis and fertilization. Soil testing may be required to determine fertilization and soil amendment applications.

b. Decompact tree. See specification.

c. Soil aeration or pneumatic excavation. See specification.

d. Pruning of dead or diseased tree branches.

e. Root collar excavation, to remove any soil that accumulated around the base of the tree during construction.

f. Tree irrigation, for up to one year after the end of construction. Method is to be as directed by the Director of A&H or their designated representative or as per the applicable specification.

g. Tree growth regulator. See specification.

h. Soil replacement in eroded areas.

i. Root pruning.

j. Bark tracing.

RESTITUTION-

a. Tree damage: For trees that are injured during the course of construction but not destroyed, restitution will be enforced per Title 56 of the New York City Rules and Regulations, Chapter 5, section 5-02(e) Injured Trees. Payment to the Department shall be the difference between the tree's condition appraisal, as per the NYC Parks Tree Valuation Method described in Section 5-02(a) before and after the damage. The damage assessment shall be determined by A&H or their designated representative. If no pre-damage assessment was made, the tree will be assumed to have been in perfect condition.

b. Tree Destruction/Unauthorized Tree Removal: For trees irreparably damaged or destroyed and/or trees removed without authorization during the course of construction as determined by the Director of A&H or their designated representative, restitution will be enforced per Title 56 of the New York City Rules and Regulations, Chapter 5, section 5-02(c) and 5-02(d). Local Law 3 of 2010 shall apply and restitution shall be made according to the NYC Parks Tree Valuation Method, as determined by the Director of A&H or their designated representative. If no pre-damage assessment was made, the tree will be assumed to have been in perfect condition. For irreparable tree damage, the tree shall be removed at the Contractor's sole expense.

Restitution as described above will be as determined and directed by the Director of A&H or their designated representative and may include the following:

(1) Direct planting by the Contractor or its subcontractor of the required equivalent number of replacement trees at locations determined by the Director of A&H or their designated representative; or

(2) A monetary credit for the value of the tree destroyed; or

(3) A combination of (1) and (2) above, as determined by the Director of A&H or their designated representative.

2. ASIAN LONGHORNED BEETLE QUARANTINE ZONE:

Any Sub/Contractor who will perform tree work of any kind within the Asian Longhorned Beetle (ALB) Quarantine Zone must be Certified by the State of New York Department of Agriculture and Markets. Tree work includes, but is not limited to planting trees, transplanting trees, pruning & fertilizing trees, removing trees and stumps, and clearing and grubbing trees or roots. To view a current map of the geographic area included in the quarantine zone within New York City, see the following website:
http://www.aphis.usda.gov/plant_health/plant_pest_info/asian_lhb/alb_maps.shtml
The Asian Longhorned Beetle (ALB) is a destructive wood boring insect. It can cause serious damage to healthy trees by boring into their heartwood and

eventually killing them. Nursery stock, logs, green lumber, firewood, stumps, roots, branches and debris of one-half (½") inch or more in diameter are subject to infestation. In an effort to control the spread of the beetle to other areas, quarantine has been imposed on large portions of the City of New York as per Part 139 of Title 1 NYCRR by the State of New York Department of Agriculture and Markets. All Sub/Contractors will be held responsible for compliance with State of New York Agriculture and Market Law and Emergency Rule Making. For additional information regarding procedures, contact the Director of A&H or their designated representative at Capital.Arb-Hort@parks.nyc.gov and see the U.S. Department of Agriculture (USDA) website: http://www.aphis.usda.gov.

3. **UTILITY PRUNING REQUIREMENTS:**
Wires shall be treated as live and high voltage until verified by the utility. Branches touching wires shall be pruned by the utility before work begins. Limbs and branches shall not be dropped onto overhead wires. If limbs or branches fall across electrical wires, all work shall stop immediately and the utility shall be notified.

When climbing or working in trees, pruners shall try to position themselves so that the trunk or limbs are between their bodies and electrical wires. Pruners shall not work with their backs toward electrical wires. A bucket truck is the preferred method of pruning when climbing poses a greater electrical contact threat.

Personal protective gear shall have appropriate all-electric characteristics needed for working near electricity.

ARTICLE 15. ENGINEER'S ESTIMATE - QUANTITY OVERRUN CONTROL

The Engineer's estimated quantities for the various unit items of this contract stated in the bid schedule are approximate. If during the progress of the work, the actual quantity required to complete the work of any unit item approaches the Engineer's estimated quantity and; due to errors, site conditions, changes in design or any other reason, it appears that the actual quantity necessary to complete the work will exceed the estimated quantity by 25 percent or more, the Contractor shall cease work on the item and immediately notify the Engineer of such potential overrun.

The Contractor shall not be compensated for work performed in excess of one hundred twenty five (125) percent of the estimated quantities in the bid schedule without authorization from the Engineer.

The Contractor will be paid at the unit price bid for quantities up to one hundred twenty five percent of the estimated quantities listed in the bid schedule. If quantities on any item exceed one hundred twenty five (125) percent of the estimate, the City reserves the right and the Contractor agrees to re-negotiate the unit price bid to a new price for such quantities. Such re-negotiations will be done in writing. This will be necessary only

when the Contractor's bid price exceeds the DPR Engineer's estimated unit price for that Contract. If the City and Contractor cannot agree to a new price, then the City, if it requires additional units of the item, shall order the Contractor to perform the additional work on a time and material basis for the actual and reasonable cost as determined under Agreement Article 26, but in no event at a cost exceeding the bid price.

ARTICLE 16. DEW POINT CHART FOR PAINTING

The following chart shall serve as a guide in finding the minimum allowable temperature for paint application under the various items of this Contract. The painting Contractor is required to carry a surface temperature thermometer to prove that the surface temperature is above the minimum as required in this Chart:

DEW POINT CHART (FAHRENHEIT)

AMBIENT AIR TEMPERATURE IN DEGREES F

PERCENT RELATIVE HUMIDITY

	20	30	40	50	60	70	80	90	100	110
90	18	28	37	47	57	67	77	87	97	107
85	17	26	36	45	55	65	75	84	95	104
80	16	25	34	44	54	63	73	82	93	102
75	15	24	33	42	52	62	71	80	91	100
70	13	22	31	40	50	60	68	78	88	96
65	12	20	29	38	47	57	66	76	85	93
60	11	19	27	36	45	55	64	73	83	92
55	9	17	25	34	43	53	61	70	80	89
50	6	15	23	31	40	50	59	67	77	86
45	4	13	21	29	37	47	56	64	73	82
40	1	11	18	26	35	43	52	61	69	78
35	-2	8	16	23	31	40	48	57	65	74
30	-6	4	13	20	28	36	44	52	61	69

DEW POINT: Temperature at which moisture will condense on surface. No coatings should be applied unless surface temperature is a minimum of 5 degrees F above this point. Temperature must be maintained during curing. To calculate the proper surface temperature, use the above charts follows:

EXAMPLE: If air temperature is 70 degrees F and relative humidity is 65%, the dew point is 57 degrees F. No coating should be applied unless surface temperature is 62 degree F minimum.

ARTICLE 17. BUILDING CODE

The Building Code of the City of New York shall be considered a part of these specifications and all provisions of the Code which may apply to the work of this contract are part of these specifications as if repeated in full herein and shall be preferred to any provisions herein which may conflict.

ARTICLE 18. SUPPLEMENTARY DEFINITIONS

The following definitions are intended to supplement the definitions listed in Chapter 1, Article 2 of the Agreement.

COS OR COORDINATOR OF SUBMITTALS - Shall mean the D.P.R. employee who manages the flow of information submittals between the Contractor and the D.P.R. personnel assigned to the project.

D.P.R. - Shall mean the New York City Department of Parks and Recreation.

ENGINEER - Shall mean the D.P.R. employee or private consultant designated to administer the projects construction on behalf of N.Y.C. Department of Parks and Recreation. The Engineer may be either a Professional Engineer (PE), or Registered Landscape Architect (RLA), or Registered Architect (RA), duly licensed to hold such title and practice in the State of New York.

PROJECT MANAGER/DESIGN - Shall mean the D.P.R. employee or private consultant who will act on the behalf of the N.Y.C. Parks and Recreation to perform design services relating to the project.

ARTICLE 19. LICENSED PLUMBER REQUIREMENTS

Information for Bidders - No individual, corporation, partnership or other business association shall be permitted to bid or be awarded any "plumbing contract", as defined herein, by the Agency unless such individual or entity is a licensed master plumber, as permitted by the Building Code of the City of New York, provided that fifty-one (51%) percent or more of the control or voting stock of such partnership, corporation or other business entity is owned by one or more holders of a license to perform this work in the City of New York.

A "plumbing contract" is defined as a contract where the word "plumbing" appears in the title and/or the contract is deemed to be plumbing work as defined by the Assistant Commissioner in a Contract Addendum.

The installation, maintenance or modification of any and all plumbing, gas piping, swimming pool piping and any other piping system included in any contract whether specifically a "plumbing contract" or not, is to be performed either by a licensed plumber or under the direct and continuing supervision of a licensed plumber, partnership, corporation or other business association as defined and authorized under applicable sections of the Building Code of the City of New York. Copies of a valid certified Master Plumbing License from the City of New York shall be made available for inspection by the Department upon request

ARTICLE 20. LICENSED ELECTRICIAN REQUIREMENTS

Information for Bidders - No individual, corporation, partnership or other business

association shall be permitted to bid on or be awarded any "electrical contract" as defined herein, by the Agency unless such individual or entity is a licensed electrician, as permitted by the Building Code of the City of New York, provided that fifty-one (51%) percent or more of the control or voting stock of such partnership, corporation or other business entity is owned by one or more holders of a license to perform electrical work in the City of New York.

An "electrical contract" is defined as a contract where the word "electrical" appears in the title and/or the contract is deemed to be electrical work as defined by the Assistant Commissioner in a Contract Addendum.

The installation, maintenance or modification of any and all electrical and lighting systems included in any contract, whether it be specifically an "electrical contract" or not, is to be performed either by a licensed electrician, partnership, corporation or other business association as defined and authorized under applicable sections of the Building Code of the City of New York.

Copies of a valid Electrical License from the City of New York shall be made available for inspection by the Department upon request.

ARTICLE 21. GAUGE OF METAL

Unless otherwise specified, all gauges of metal noted in these specifications shall be of U.S. Standard Gauge.

ARTICLE 22. REGULATIONS GOVERNING WORKMEN

Workmen shall be properly identified.

ARTICLE 23. JOINING NEW TO EXISTING WORK

This article is intended to supplemental General Conditions, Section A – General Provisions Article 13. The Contractor shall be required to do all of the work necessary to correlate the new work to the existing work. No additional payment will be made for this, but the cost thereof shall be deemed included in the various items of this Contract.

ARTICLE 24. CUTTING AND PATCHING

This Article supplements Article 10, Section A - General Conditions.

Cutting: The Contractor under this contract will be required to perform all cutting necessary to remove all existing construction, new construction or both, necessary to install new equipment and material specified within these contract documents including trenching if required.

In addition, any cutting required to provide access for removal, delivery into areas of installation and installation of equipment under this contract shall be provided for under

this article. The contractor is reminded of his responsibility to coordinate his construction with other contractors at the site and shall restore the work of other contractors damaged by him. The City shall not bear any cutting and patching costs due to the contractor's failure to properly coordinate the work with other contracts.

Patching: The Contractor under this contract will be required to perform all patching and restoration required as a result of the cutting performed above or required to join existing work to new construction, new construction or both.

Debris: All debris resulting from the cutting and patching work must be removed from the premises by the Contractor performing the work.

Size of Opening: Opening shall be no larger than required for the execution of the work.

Payment: Payment for the required cutting and patching shall be deemed included within the price bid for equipment or materials. No separate payment will be made in connection with any of the aforementioned work for unclassified excavation.

Rock Excavation; if required will be paid for separately, as defined within the standard DPR specifications for excavation.

ARTICLE 25. ELECTRICAL AND MECHANICAL DRAWINGS

Where present, drawing may be diagrammatic but should be followed as closely as actual conditions and work of other trades permit. Locations shall be determined in the field, the exact positions being determined by the Engineer. Drawings and Specifications are complementary and the requirements of one shall be as binding as required by both, but any apparatus, material or labor not herein specifically mentioned but necessary to complete the work, shall be deemed part of these specifications and shall be furnished and installed by the Contractor without extra cost to the City.

ARTICLE 26. CONTRACTORS' STAGING AREA

This article is intended to supplement General Conditions, Section A - General Provisions Article 6. The Contractor shall have a neat sign identifying his shanty or field office.

ARTICLE 27. OTHER CONTRACTS AND WORK

This article is intended to supplement Chapter III, Article 12 of the Agreement and General Conditions, Section A - General Provisions Article 3. Contractors for other work may be let or work may be done by the forces of the Department of Parks or other City Departments of Public Utilities within the area during the life of this Contract.

The Contractor, therefore, shall not have exclusive occupancy of the Site, but shall cooperate in every way with the Department of Parks, Public Utilities, other City

Departments and other Contractors. All Disputes as to rights of Contractors shall be settled by the Engineer.

The Contractor agrees that any additional cost of doing the work under this Contract, as a result of delays, interference, and lack of a clear site is included in the prices bid for the various items in the Contract.

ARTICLE 28. CLEANING UP AND FIRE PRECAUTION

The Contractor shall, while the work progresses and during the entire term of the contract, keep the field in a clean condition, free from rubbish and all undue accumulation of surplus materials. Material and equipment shall be protected to prevent damage to those using the field. He shall, at the end of each day's work, remove all rubbish and unused material and repair any damage done to the work. All possible fire precautions shall be taken. No smoking will be permitted on the premises.

ARTICLE 29. BUILDING DEPARTMENT CERTIFICATE

Before final payment will be made, certificates of inspection signed by the Building Department indicating approval by the Commissioner must be filed in the Office of the Comptroller of the City. Copy shall be submitted to the Engineer.

ARTICLE 30. SUPERINTENDENT

The Contractor shall provide a qualified superintendent or approved supervisor who shall be continuously on the job site during the period of the work under this contract. The superintendent shall have the Contractor's authority to receive and execute any directions given by the Engineer in the absence of the Contractor.

ARTICLE 31. TEMPORARY SERVICES

The Contractor shall provide, at no additional cost to the City, his own temporary heat, water, sanitary, light and power that is required, as specified under Standard Park Legal's, General Conditions, Section A - General Provisions, Article 1 (page 134) and Article 7 (page 149).

ARTICLE 32. CERTIFICATION OR MEMBERSHIP

In these specifications, wherever certification by, or membership in, a nongovernmental entity or organization is required, this shall be deemed to mean such certification or membership or possession of equivalent qualifications or characteristics as determined by the Agency, is required. The foregoing shall not be construed to be a waiver of any legally required Federal, State or local certification or licensing requirement, nor shall it apply where certification by the manufacturer of materials or equipment is called for.

ARTICLE 33. CRANE SAFETY

Use of cranes shall comply with New York City Building Code RS-19-2 and Occupational Safety and Health Administration, OSHA 29 CFR 1926 Subpart CC, "Cranes & Derricks in Construction". A crane is defined by OSHA as a machine for lifting and lowering a load and moving it horizontally. Cranes are to be operated only by qualified and trained personnel certified per 29 CFR 1926.1427. A designated competent person must inspect the crane and all crane controls before use. The crane must be on a firm/stable surface and level. During assembly/disassembly pins shall not be unlocked or removed unless sections are blocked and secure. Fully extend outriggers and barricade accessible areas inside the crane's swing radius, watch for overhead electric power lines and maintain at least 10-foot safe working clearance from the lines. Inspect all rigging prior to use, do not wrap hoist lines around the load, be sure to use the correct load chart capacity while making lifts, raise load a few inches, hold, verify capacity/balance, and test brake system before delivering load. Do not move loads over workers and be sure to follow signals and manufacturer's instructions while operating cranes. The Contractor shall submit to the Agency, fifteen (15) days prior to the Order to Work date, the means and methods for use of any and all cranes that the Contractor intends to use to perform the work. The Contractor shall submit proof of any and all necessary permits from all oversight agencies regarding the operation and use of the crane prior to transporting the crane to the site. The Contractor shall also submit the names of the designated competent person who will inspect the crane, any operator(s) of the crane, and proof that the operator(s) is certified to operate the crane. The Contractor shall not transport the crane to the site nor operate it without prior written approval from the Agency.

ARTICLE 34 - ADJUSTING THE AMOUNT OF WORK

This is a requirements contract.

Pursuant to Schedule A of this contract, the successful bidders shall submit Performance Bonds and Payment Security for 100% of the award amount of the contract.

The estimated quantities of work listed on the bid pages are provided only to determine the low bidder, to establish the approximate relative quantities of the various items, and to set unit prices. Accordingly, the City reserves the right to reduce the amount of work done under each item of the contract. The bid total for this contract is not expected to be achieved.

The City reserves the right to increase and/or decrease the amount of the work in accordance with the Information for Bidders Section 34 – Unit Price Contracts, Standard Construction Contract Article 26 – Methods of Payment for Overruns and Extra Work and Article 29 – Omitted Work.

This contract does not include a separate item for mobilization. The Contractor's cost for insurance, bonds, and other incidental expenses required to set up its facilities and operations at each site should be considered as part of its general overhead and factored into its unit prices bid for the individual work items.

All work must be performed within the cost limitations of the contract. All projected costs shall be determined by the Contractor. The Contractor shall be responsible for advising on a timely basis of any contract increases that would result in cost overruns, to permit the agency sufficient time to decide whether to reduce the scope of the work or to go for the increased funds.

ARTICLE 35 - FEMA REQUIREMENTS

The Contractor must comply with all the requirements of the Federal Emergency Management Agency (FEMA) for this Contract.

Pursuant to 44 CFR §13.36(i), the following provisions are inserted into the Contract:

1. The City shall have the right to terminate this Contract, in whole or in part, for cause or without cause. The City shall give no less than 30 days written notice of termination ("Termination Notice") for termination without cause and no less than 10 days notice for termination for cause unless a shorter time is determined by the Commissioner to be necessary. If the City terminates this Contract the City shall not incur or pay any further obligation pursuant to this Contract beyond the termination date set by the City in the Termination Notice. The City shall pay for services rendered or goods delivered in accordance with this Contract prior to the termination date. In addition, any obligation necessarily incurred by the Contractor on account of this Contract prior to receipt of notice of termination and falling due after the termination date shall be paid by the City in accordance with the terms of this Contract. In no event shall such obligation be construed as including any lease or other occupancy agreement, oral or written, entered into between the Contractor and its landlord.

2. In the event of a Default of Contractor's obligations under this Contract, the Commissioner, after declaring the Contractor in default, may have the services under the Contract completed by such means and in such manner, by contract with or without public letting, or otherwise, as he or she may deem advisable in accordance with applicable PPB Rules. After such completion, the Commissioner shall certify the expense incurred in such completion, which shall include the cost of re-letting. Should the expense of such completion, as certified by the Commissioner, exceed the total sum which would have been payable under the Contract if it had been completed by the Contractor, any excess shall be promptly paid by the Contractor upon demand by the City. The excess expense of such completion, including any and all related and incidental costs, as so certified by the Commissioner, and any liquidated damages assessed against the Contractor, may be charged against and deducted out of monies earned by the Contractor.

3. If applicable, Contractor shall comply, and shall cause its subcontractors to comply with Executive Order 11246 of September 24, 1964, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967 and supplemented in Department of Labor regulations (41 CFR Chapter 60).(applicable to all construction contracts awarded in excess of $10,000)

4. If applicable, Contractor shall comply, and shall cause its subcontractors to comply with the Copeland "Anti-Kickback" Act (18 U.S.C 874) as supplemented in Department of Labor regulations (29 CFR Part 3).(applicable to contracts for construction or repair)

5. If applicable, Contractor shall comply, and cause its subcontractors to comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR Part 5).(applicable to construction contracts in excess of $2,000)

6. If applicable, Contractor shall comply and cause its subcontractors to comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5).(applicable to construction contracts in excess of $2,000, and in excess of $2,500 for other contract which involve the employment of mechanics or laborers)

7. Contractor shall be required to produce and deliver such reports relating to the services performed under this Contract as may be required by the City or any other State or federal governmental agency with jurisdiction.

8. Pursuant to 44 CFR §13.34, if the services under this Contract are supported by a federal grant of funds FEMA reserves a royalty-free, non-exclusive, and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use, for Federal Government purposes: (1) the copyright in any work developed under a grant, subgrant, or contract under a grant or subgrant; and (2) any rights of copyright to which a grantee, subgrantee, or contractor purchases ownership with grant support.

9. Any reports, documents, data, photographs, deliverables, and/or other materials produced pursuant to this Contract ("Copyrightable Materials"), and any and all drafts and/or other preliminary materials in any format related to such items produced pursuant to this Contract, shall upon their creation become the exclusive property of the City. The Copyrightable Materials shall be considered "work-made-for-hire" within the meaning and purview of Section 101 of the United States Copyright Act, 17 U.S.C. § 101, and the City shall be the copyright owner thereof and of all aspects, elements and components thereof in which copyright protection might exist. To the extent that the Copyrightable Materials do not qualify as "work-made-for-hire," the Contractor hereby irrevocably transfers, assigns and conveys exclusive copyright ownership in and to the Copyrightable Materials to the City, free and clear of any liens, claims, or other encumbrances. The Contractor shall retain no copyright or intellectual property interest in the Copyrightable Materials.

10. The Contractor shall promptly and fully report to the Department any discovery or invention arising out of or developed in the course of performance of this Contract. If the services under this Contract are supported by a federal grant of funds, the Contractor shall promptly and fully report to the federal government for the federal government to make a determination as to whether patent protection on such invention shall be sought and how the rights in the invention or discovery, including rights under any patent issued thereon, shall be disposed of and administered in order to protect the public interest.

11. The Contractor shall grant access to the State, the City, FEMA, and/or the Comptroller General of the United States, or any of their duly authorized representatives, to any books, documents, papers, and/or records of the Contractor that are directly pertinent to the Contract for the purpose of making audit, examination, excerpts, and transcriptions. Contractor shall retain all books, documents, papers or records relating to the services performed under this

Contract for three years after final payment under this Contract is made and all other pending matters are closed.

12. For any contract or subcontract the value of which is in excess of $100,000: The Contractor shall comply and shall cause its subcontractor to comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. §1857(h)), Section 508 of the Clean Water Act (33 U.S.C. §1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15).

13. The Contractor shall comply with mandatory standards and policies relating to energy efficiency that are contained in the State's energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

ARTICLE 36 - THE EMERGENCY SAFE-UP & CLEAN-UP IN CONNECTION WITH HURRICANE SANDY AT VARIOUS PARKS & RECREATION FACILITES IN NORTHERN STATEN ISLAND - CONTRACT NO. RG-313M

THE PRIORITIZED SCOPE OF WORK SHALL INCLUDE THE FOLLOWING:

The following is a list of work that must be performed in the time indicated from the Order to Work. This list is not all inclusive of the work to be performed under the contract and shall be performed by the Contractor simultaneously with any other work and/or sites under the Contract as directed by the Agency. The Agency reserves the right to change, delete, and/or add to the list of the prioritized scope of work. The locations shown are approximate and quantities provided are estimated. The Contractor shall have no right to any claims against the City if the Agency revises/changes/adds/deletes the proposed list.

1. Remove Storm Debris from Beaches : Remove all debris from the beach and adjacent areas. Unless otherwise directed by the Agency, this work must be completed within 90 consecutive calendar days (CCD) of Order to Work at all Swimming Beaches and 120 consecutive calendar days of Order to Work at all other Beaches and Park Sites.

2. Buildings: Demolish buildings specified by the Agency. Place clean sand to fill voids and provide smooth grade transitions. Remove storm debris and sand inside/outside of buildings. Provide temporary blocking and structural support for damaged walls and facades. Clean floor drains and sanitary lines to manhole/sewer. Perform mold and asbestos remediation as per recommendations from mold and asbestos testing by others. Remove wallboard subjected to flood water as well as unsalvageable equipment and furniture. Cordon off uninhabitable spaces. Unless otherwise directed by the Agency this work must be completed within 30 consecutive calendar days (CCD) of Order to Work.

3. Relocate Clean Sand and Beach Raking: Relocate clean sand from areas inland of the boardwalk and promenade as well as other areas as directed. Mechanically clean sand as directed and relocate to the designated beach areas. Grade and mechanically rake the newly deposited sand. Unless otherwise directed by the Agency this work must be completed within 120 consecutive calendar days (CCD) of Order to Work.

4. Ramps Stairs & Railings : Remove damaged/displaced sections of boardwalk, ramps, stairs and railings. Add security fencing upon the boardwalk openings in those areas. Unless otherwise directed by the Agency this work must be completed within 30 consecutive calendar days (CCD) of Order to Work.

5. Security Fencing at Jetties and Outfalls: Install security fencing as indicated in the plans and specifications. Unless otherwise directed by the Agency this work must be completed within 60 consecutive calendar days (CCD) of Order to Work.

ITEM NO. N/A **CONSTRUCTION SIGN ON FENCE**
ITEM NO. 1 **CONSTRUCTION SIGN ON FRAME**

WORK: Under this Item, the Contractor shall furnish, erect, and maintain a **CONSTRUCTION SIGN** in accordance with the plans and specifications.

MATERIALS: The sign shall be a vinyl film four-color image photo transfer laminated on M.D.O. board. Over lamination will not be required. All plywood shall be one-half inch (1/2") thick Douglas Fir, exterior grade, five (5) plies. The front side of the sign shall be a Medium Density Overlay (M.D.O.) which is plywood with a resin impregnated fiber overlay. Reverse side to be grade 'C' or better. Size of sign shall be 66.75" X 46.375" (approximately 5'-6" X 3'-10"). All edges and back shall be sealed with one coat of exterior grade primer. Color of primer to be white unless otherwise directed.

A compact disc with the custom image in Illustrator 8.0 format (50% actual size) will be provided to the Contractor at the pre-construction meeting.

The Construction Sign shall be as manufactured by Sign Design Group of NY, Inc., LIC, N.Y, Manhattan Signs and Designs, New York, N.Y., Mineola Signs, Mineola, N.Y., or approved equal.

INSTALLATION & LOCATION: The Construction Sign shall be installed either on the fence at the Park entrance, or a wood frame as indicated on the contract drawings. Construction Sign shall be installed in a true vertical position and mounted to fence with four (4) one-half (1/2") inch diameter x six (6") inch long galvanized lag bolt, bolted to additional two (2) 2 x 4 lumber slats in the back of the fence as shown on the standard detail.

1. **For Construction Sign on Fence:** Installation shall be as per standard detail.
   A. On Steel Fence, mounted over upper horizontal steel bar.
   B. On Chain Link Fence, mounted over horizontal brace or continuous midrail.
   C. On Construction Fence, mounted between vertical posts, with extra post at no more than 4'-0" o.c. (see Construction Fence Spec).

2. **For Construction Sign on Frame**: Installation shall be as per standard detail.

MAINTENANCE: The Contractor shall maintain the sign during the life of the contract, in a condition satisfactory to the Engineer. Maintenance of the construction sign includes, but is not limited to, restoration of any portion of the sign that has been defaced by graffiti, or any necessary changes to text as required by the Engineer. Modifications to the text and names printed on the sign may occur throughout the life of the contract. Modifications such as name revisions, dignitary title changes, completion dates, and text revisions may be required to maintain the sign in accordance with current information. All modification to the text on the construction sign shall match the font and format of the original text. The Contractor shall attach the modified text to the construction sign in a manner that will not peel off. The Contractor shall install custom information on the sign within forty-eight (48) hours of direction by the Engineer.

NOTE: Upon completion of the contract, the sign shall be removed by the Contractor.

MEASUREMENT AND PAYMENT: For each **CONSTRUCTION SIGN** of each type furnished and erected in accordance with the plans, specifications, and directions of the Engineer, the Contractor shall receive the unit price bid.

The price bid shall be a unit price for **EACH** Construction Sign furnished and erected and shall include the cost of all labor, materials and equipment necessary to complete the work, including hardware for mounting on fence or frame and continuous maintenance, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

Payment for work performed under this item shall be made as follows:

50% - upon initial installation

50% - at the final inspection, having maintained the construction sign for the life of thecontracttothesatisfactionoftheEngineer.

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ITEM NO. 2 **CONSTRUCTION FENCE 8'-0" HT.**

WORK: Under this item, the Contractor shall furnish and install an 8'-0" high chain link construction fence and gates in accordance with the plans, specifications and as directed by the Engineer.

MATERIALS:

FABRIC: Fabric shall be 11 Ga., galvanized steel wire woven into 2 inch diamond mesh, knuckled at the bottom and barbed at the top.

LINE POSTS: Line posts shall be TYPE I, 2 ½ inch O.D. galvanized steel, standard weight pipe conforming to F 1083, schedule 40, weighing 3.65 pounds per linear foot or posts may be TYPEII, SS-40 steel tubing as manufactured by Allied Tube and Conduit Corp. of Harvey, Illinois, or approved equal. Tubing must conform to ASTM A-569, cold rolled steel pipe and coated with a minimum of 0.9 ounces of zinc per square foot, a minimum of 15 micrograms of zinc chromate per square inch. Steel tubing supplied under this option shall be of the same outside diameter as Schedule 40 pipe and achieve minimum yield strength of 50,000 p.s.i.

TERMINAL POSTS: Terminal posts, including corner posts and gate posts shall be 3 inch O.D. galvanized steel, standard weight pipe conforming to ASTM F1083 schedule 40, weighing 5.79 pounds per linear foot.

BRACES: Braces shall be 1 5/8" inch O.D. galvanized steel, standard weight pipe conforming to ASTM F 1083, schedule 40, weighing 2.27 pounds per linear foot. Trusses shall be $^{5}/_{16}$" diameter adjustable truss rods.

TOP&BOTTOMTENSIONWIRE: Tension wire shall be No. 6 gauge galvanized wire.

FITTINGSANDHARDWARE: Hardware, fittings and post caps shall be ductile iron, cast steel or pressed steel, all hot dipped galvanized.

GATES: Gates shall be of similar construction as the fence and shall be provided with locks. Gates shall be placed at locations as shown on the plans or as required by the Contractor and approved by the Engineer. The Engineer shall be supplied with a set of keys, one (1) key for every lock.

INSTALLATION: Corner and gate posts shall be set in concrete footings to a minimum depth of three (3'-0") feet. Braces and truss rods shall be installed adjacent to corner and gate posts. Line posts shall be driven directly in the ground to a minimum depth of three (3'-0") feet. All posts shall be set true to line and grade.

Where rock or wet areas are encountered, the Contractor shall submit details for adequately securing the posts in place. Chain link fabric shall be secured to line posts with $^{3}/_{16}$ inch aluminum tie-wire spaced 18

inches apart on posts. Fabric shall be secured to terminal posts with tension bars and bands and to top and bottom tension wires with 9 gauge hot rings spaced 24 inches apart. Post caps shall be installed on all posts.

LINE POST SPACING SHALL NOT EXCEED 8'-0" ON CENTER.

Contractor is also responsible for restoration of any lawn or pavement disturbed by fence or in areas adjacent to fencing, after removal of fencing is completed. The cost of the restoration shall be included under this item. Finished fence shall not display Fence Company name or other forms of advertising.

The Contractor shall maintain the chain link construction fence and gates during the life of this contract and shall repair or replace all members that are disturbed, damaged, destroyed or vandalized at no cost to the City. Upon completion of the work the fence shall be removed by the Contractor.

MEASUREMENT AND PAYMENT: The quantity of **CONSTRUCTION FENCE 8'-0" HT.** to be paid for under this item shall be the number of **LINEAR FEET** furnished and installed complete, including gates in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price bid per **LINEAR FOOT** of construction fence, including gates, furnished and installed, and shall include the cost of all labor, material, equipment and incidental expenses necessary to complete and maintain the work in accordance with the plans and specifications to the satisfaction of the Engineer.

Payment for work performed under this item shall be made as follows:

50% - upon initial installation
50% - at the final inspection, having maintained the fencing for the life of the contract to the satisfaction of the Engineer.

The City reserves the right to eliminate this item from the contract.

END OF PAGE

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ITEM NO. 3 TEMPORARY SNOW FENCE BOUNDARY

WORK: Under this item, the Contractor shall furnish and install a 4'-0" high temporary snow fence boundary in accordance with the plans and specifications and as directed by the Engineer.

MATERIALS:
Snow fence shall be 4'-0" in height, constructed of either wood or plastic, as described below.
Fabric: Shall be commercially woven wood slats and wire Or ** high-density polyethylene. Color to be bright orange or black as selected by the Designer.
**Where used for tree protection purposes, bright orange polyethylene is preferred.
LinePosts: Shall be two and one-half (2 1/2) inch diameter steel stakes.
Tie Wire: For wood fence shall be aluminum or steel ties. For plastic shall be general-purpose heavy plastic ties.

INSTALLATION: The steel stakes shall be driven into the ground to a depth of two (2) feet. Fabric shall be secured to line stakes with three-sixteenth (3/16) inch aluminum or steel tie wire or plastic ties spaced eighteen (18) inches apart on posts. **LINE POST SPACING SHALL NOT EXCEED EIGHT (8) FEET ON CENTER.**

The Contractor shall maintain the temporary snow fence boundary during the life of this contract and shall repair or replace all members that are disturbed, damaged, destroyed or vandalized at no extra cost to the City. Upon completion of the work, the fence shall be removed by the Contractor.

RELOCATION: At no extra cost to the City, the Engineer reserves the right to direct the Contractor to remove and reinstall snow fence within the Contract limit line. The Contractor may be asked to relocate the fence a maximum of three (3) times in excess of the initial installation.

Contractor is also responsible for restoration of any lawn or pavement disturbed by fence or in areas adjacent to fencing, after removal of fencing is completed. The cost of the restoration shall be included under this item.

MEASUREMENT AND PAYMENT: The quantity of temporary snow fence (wood slat or polyethylene) to be paid for under this item shall be the number of **LINEAR FEET** furnished and installed complete, including stakes, in accordance with the plans and specifications to the satisfaction of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of snow fence boundary (wood slat or polyethylene) and shall include the cost of all labor, materials and equipment necessary to complete and maintain the work including all necessary relocation operations, and restoration of lawn or pavement in accordance with the plans and specifications to the satisfaction of the Engineer.

Payment for work performed under this item shall be made as follows:

50% - upon initial installation

50% - at the final inspection, having maintained the fencing for the life of the contract to the satisfaction of the Engineer.

The City reserves the right to eliminate this item from the Contract.
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ITEM NO. 4 **TEMPORARY WOODEN TREE GUARD WITH TREE WRAP**
ITEM NO. 5 **TEMPORARY WOODEN TREE GUARD FOR GROVES**

WORK: Under these items, before commencing any work on the site, the Contractor shall erect Temporary Wooden Tree Guards With Tree Wrap, and/or Temporary Wooden Tree Guards for Groves around existing trees in accordance with the plans, specifications and directions of the Engineer. Also, the branches of existing trees shall be tied up, when directed, to prevent injury during work on the site. Temporary Wooden tree guard with tree wrap is intended to protect individual trees. Temporary wooden tree guard for groves shall enclose a group (or grove) of several trees.

MATERIAL:

TreeGuard: Lumber shall be Yellow Pine, Douglas Fir or Spruce. Nails shall be galvanized. No paint will be required. All work shall be done in a neat and workmanlike manner to the satisfaction of the Engineer.
TreeWrap: Tree wrap shall be snow fencing composed of commercially woven wood slats and wire.
Line Post/Stake: Line post/Stake shall be 'Heavy Vinyl Guard Post', 'U' shaped, 13 gauge, rustproofed steel, three (3'-0") foot height, manufactured by Boundary Fence and Rail Systems, Richmond Hill, NY or approved equal. Color to be Black or Green.

INSTALLATION: Snow fencing shall be carefully wrapped around the trunk of the tree, above the flare and secured with steel or aluminum tie wire, as directed by the Director or Aboriculture and Horticulture Unit or his designated representative. Tree wrap shall be installed prior to the installation of the tree guards.

The temporary wooden tree guards shall be installed where shown on the contract drawings. Posts shall be installed at approximately eight feet on center, unless otherwise noted on the plans or directed by the Engineer. They shall be installed with line post/stakes securely attached with galvanized or stainless steel screws to the wooden posts and driven 18" into the ground, as directed by the Director or Aboriculture and Horticulture Unit or his designated representative, without damage to existing trees. If any temporary wooden tree guards or wrap are damaged during the course of the work, they shall be immediately repaired, or replaced by a new temporary wooden tree guard or wrap at no additional expense.

Temporary wooden tree guards and wrap shall remain in place and not be moved or removed without written permission of the Director of Aboriculture and Horticulture Unit or his designated representative until all work which might cause damage or defacement has been completed. Upon completion of the work, to the satisfaction of the Engineer, the Contractor shall remove and dispose of all temporary wooden tree guards and wrap.

MEASUREMENT AND PAYMENT: The price bid for **TEMPORARY WOODEN TREE GUARD WITH TREE WRAP** shall be a unit price per tree guard with wrap, furnished, erected and removed in accordance with the plans, specifications and directions of the Engineer.

The price bid for temporary wooden tree guards shall be a unit price for **EACH** tree guard with tree wrap and shall include the cost of all labor, materials, equipment and expenses necessary to furnish, erect and remove the tree guards, including tree wrap, line post/stakes, and tying of tree branches, all in accordance with the contract drawings and in accordance with these specifications, to the satisfaction of the Engineer.

The price bid for **TEMPORARY WOODEN TREE GUARD FOR GROVES** to be paid for under this Item shall be the number of Linear Feet of tree guard furnished, erected and removed in accordance with the plans, specifications and directions of the Engineer.

The price bid for temporary wooden tree guard for groves shall be a unit price per **LINEAR FOOT** of tree guard and shall include the cost of all labor, materials, equipment and expenses necessary to furnish, erect and remove the tree guards, including line post/stakes and tying of tree branches, all in accordance with the contract drawings and in accordance with these specifications, to the satisfaction of the Engineer.

Payment for work performed under this item shall be made as follows:

50% - upon initial installation

50% - at the final inspection, having maintained the temporary wooden tree guards for the life of the contract to the satisfaction of the Engineer.

The City reserves the right to eliminate this item from the contract.

Where needed, additional tree protection, such as "Protect existing tree roots with Wood chips", "Protect existing tree roots with plywood", "Hand and/or Pneumatic Excavation" and "Temporary Snow Fence Boundary" shall be paid for under their respective items.

END OF PAGE

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ITEM NO. 6 PROTECT EXISTING TREE ROOTS w/WOOD CHIPS - 6" DEPTH

WORK: Under this Item, the Contractor shall **PROTECT EXISTING TREE ROOTS w/ WOOD CHIPS – 6" DEPTH** in accordance with the plans, specifications, and directions of the Engineer.

NOTE: Prior to starting work under this item, contact the Arboriculture and Horticulture Unit a minimum of 48 hours prior to beginning work at (718) 760-6736 or landscape.construction@parks.nyc.gov.

For additional requirements, see General Conditions, Special Provisions, Section C, Article 14 "Tree Work".

MATERIAL:

Wood Chips shall be clean chips free of any deleterious material such as ash or insecticide. Chips may be of any wood except wood waste generated from an Asian Longhorned beetle infestation or an Emerald Ash borer infestation. Wood chips produced on the site through authorized pruning and tree removal may also be used for this work. Chips shall be derived from tree material, not from wood waste or by-products like sawdust, shredded palettes, or other debris.

Asian Longhorned Beetle Quarantine Zone Regulations: Due to current Federal, State and NYC DPR policy, any wood waste that is transported must be performed by a Sub/Contractor certified by the New York State Department of Agriculture and Markets to perform tree work within the Quarantine Zone. For additional information regarding procedures, see General Conditions, Special Provisions, Section C, Article 14 "Tree Work".

INSTALLATION: Wood Chips for temporary tree root protection during construction shall be applied by hand to the surface of the tree protection area as shown on the plans or as directed by the Engineer in consultation with a representative of the Arboriculture and Horticulture Unit. Wood chips shall be applied to a uniform depth of six (6") inches over the entire area and shall be so distributed as to create a smooth level cover. Arboriculture and Horticulture Unit shall inspect the work and approve the work, as required to assure tree root protection.

Maintenance of six (6") inch depth: If any wood chips are dislocated or depleted during the course of the work, they shall be immediately replaced with new wood chips within 24 hours of notification at no additional cost to DPR.

Removal: At the completion of the work of this contract, unless otherwise directed by the Engineer, the Contractor shall remove the wood chips byhand. Wood Chips to protect existing roots shall remain in place and not be moved or removed without written permission of the Engineer until all work which might cause soil compaction or root damage has been completed.

The Contractor may submit a written request to remove by machine to the Arboriculture and Horticulture Unit. No machine removal shall be allowed without prior approval and supervision

by Arboriculture and Horticulture Unit. If any trees are damaged during removal of wood chips, the provisions of Section C, Article 14Remediation and DamageAssessment shall apply. Upon completion of the work, the wood chips shall be removed by the contractor.

MEASUREMENT AND PAYMENT: The quantity of **PROTECT EXISTING TREE ROOTS w/ WOOD CHIPS – 6" DEPTH** to be paid for under this item shall be the number of **SQUARE FEET** of wood chips furnished and installed in tree root areas in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **SQUARE FOOT** and shall include the cost of all labor, materials, and equipment necessary or required to complete the work including furnishing, removal and disposal of wood chips, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

Payment for work performed under this item shall be made as follows:

50% - upon initial installation

50% - upon removal of wood chips, having maintained the wood chips at six (6") inch depth for the construction period to the satisfaction of the Engineer.

Where required, and as directed by the Engineer, additional tree protection, such as "Geotextile-Stabilization" shall be paid for under its respective item.

END OF PAGE

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ITEM NO. 7 PROTECT EXISTING TREE ROOTS W/ PLYWOOD OR MATS

WORK: Under this item, the Contractor shall **PROTECT EXISTING TREE ROOTS W/ PLYWOOD OR MATS** in accordance with the plans, specifications, and the direction of the Engineer. Plywood sheets or ground surface protection mats shall be installed as a temporary protection for tree roots during construction operations and shall be removed from the site at the Contractors expense when work is complete.

NOTE: The Arboriculture and Horticulture Unit must be notified a minimum of 48 hours prior to beginning work at (718) 760-6736 or landscape.construction@parks.nyc.gov.

For additional information regarding procedures, see General Conditions, Special Provisions, Section C, Article 14 "Tree Work" .

MATERIALS: Unless otherwise specified, the materials shall meet the requirements of Section B, "Materials and Methods of Construction".

Plywood: shall be new or gently used four (4) foot by eight (8) foot sheets with a minimum thickness of one-half (½") inch. CCA treated lumber is not acceptable for this Work. Hardware to fasten plywood sheets, shall be corrosion resistant steel.

OR

Groundsurfaceprotectionmats: shall be manufactured from high-density polyethylene (HPDE), one-half (½) inch thick minimum, measure approximately four (4) foot by eight (8) foot, be equipped with a lip on two sides that creates an overlapping joint with an adjoining mat to allow for effective load distribution between mats, have an interlocking mechanism consisting of multiple connection points uniformally spaced along the full length of the overlapping lips of adjacent mats with fixed locking pins, and a potential load bearing capacity of at least 60 tons dependent upon sub-surface properties. Mats shall be similar to "Dura Deck®" as manufactured by Signature Fencing & Flooring, NY, NY or "AlturnaMATS®" as manufactured by Alturnamats, Inc. Titusville, PA, or approved equal.

EXECUTION:

The Contractor shall place plywood sheets and/or ground surface protection mats in areas shown on the drawings and as directed by the Engineer. The Arboriculture and Horticulture Unit shall inspect the work and approve the work as required to assure tree root protection. The Contractor shall sawcut and fasten plywood sheets if necessary to fit into tree root areas. The Contractor shall place and fasten ground surface protection mats throughout the tree root areas as shown on the tree protection plan. Plywood/Ground surface protection mats shall remain in place and not be moved or removed without written permission granted by Arboriculture and Horticulture Unit until all work which might cause compaction or root damage has been completed.

If any plywood/ground surface protection mat is dislocated, damaged, or destroyed during the

course of the work, it shall be immediately replaced by new or gently used plywood/ground surface protection mat within 48 hours of notification at no additional cost to DPR. All hardware shall be removed from the site when plywood/ground surface protection mat is relocated or removed. Plywood sheets/ground surface protection mats and all associated hardware shall be removed as necessary to facilitate construction and when they are no longer required on site as determined by the Engineer. If any trees are damaged during removal, the provisions of Section C, Article 14 Remediation and DamageAssessment shall apply. Plywood sheets/Ground surface protection mats shall be the property of the Contractor.

MEASUREMENT AND PAYMENT: The quantity of **PROTECT EXISTING TREE ROOTS W/ PLYWOOD OR MATS** to be paid for under this item shall be the number of square feet measured in place, laid in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **SQUARE FOOT** of **PLYWOOD OR MATS** for Tree Root Protection and shall include the cost of all labor, materials and equipment including: plywood or ground protection mats, saw cutting; corrosion resistant hardware; relocating, replacing and removing plywood or ground protection mats as directed by the Engineer; and all incidental expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

Where required, additional tree protection such as "Protect existing tree roots with Wood Chips" shall be paid for under its respective item.

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ITEM No. 8 REMOVE CONCESSION STAND

WORK: Under this item, the Contractor shall the demolish the existing Concession Stand and adjacent concrete aprons, do necessary excavation, plugging of sewer lines, capping water, gas and electric lines, backfilling, and compacting, all in accordance with the specifications, plans and to the satisfaction of the Engineer.

METHOD:

Demolition: The Concession Stand is to be demolished in its entirety using a rubber tire loader. Any damage to existing park facilities due to the operations of the Contractor in his normal course of work shall be repaired and replaced by the Contractor at his own expense.

The existing foundations of the structures shall be removed to within four (4) feet of the finished grade. All slabs shall be broken up and all demolished material shall be removed from the site. The ends of existing sewer lines to the building shall be plugged with concrete, twelve (12) inches into the pipe and the ends of abandoned water lines shall be capped.

BackfillingandCompacting: The Contractor shall bring the Concession Station area to the required subgrades by filling with clean borrowed fill. The filling operation shall be constructed in successive horizontal layers not exceeding six (6) inches in depth. The fill shall be spread by acceptable method and shall be thoroughly compacted to the satisfaction of the Engineer. All hollows and depressions resulting from the compaction process shall be filled and compacted repeatedly until no depressions develop.

PUBLIC AGENCY & UTILITIES: The Contractor shall apply to the Department of Water Supply, Gas and Electricity for permits to destroy the taps supplying the Concession Stand which is to be demolished. The Contractor will also be required to obtain the necessary demolition permits with the New York City Department of Buildings (DOB). These applications must be made prior to the commencement of demolition.

The Contractor shall at this time furnish the Engineer with signed copies of each of the aforementioned notices.

All Utility work must be performed by a licensed plumber and/or licensed electrician

Demolition: Utilities and services for the Concession Stand to be demolished shall be cut off before demolition is begun. During the work, or upon completion of the work, utilities or services shall be capped or sealed in the manner required by the Utility Company or as directed by the Engineer. The Contractor shall furnish the Engineer with the necessary compliance certificates from the various City Departments.

REMOVAL OF DEBRIS AND CLEANING UP: The Contractor at his own expense, keep the work and all places occupied by him clear of all refuse and rubbish that may accumulate from his operations, and shall maintain such places in a neat condition.

Before the final payment, the Contractor shall remove all falsework, temporary structures including foundations, all debris of every nature and shall leave the premises in a neat and orderly condition.

All material demolished shall become the property of the Contractor and shall be removed by him from the site of the work.

Before the final payment, the Contractor must submit to the Engineer for transmittal to the Parks department Map File, a sketch on a 8 1/2 inch by 11 inch size sheet, showing with dimensions the location of the plugged sewer lines, and capped water, gas and electric service lines.

SALVAGEABLE MATERIALS: All materials deemed salvageable by DPR Design or Field Engineer, shall become the property of DPR and shall be delivered to a city storage yard as specified, or as ordered by the Engineer. The Contractor shall notify the Foreman of Mechanics three (3) days in advance of such delivery.

MEASUREMENT AND PAYMENT: For removing the Concession Stand in accordance with the plans and specifications and the directions of the Engineer, the Contractor shall receive the **LUMP SUM** price bid.

The price bid shall be a **LUMP SUM** price for the removal of the Concession Stand to be removed and shall include the cost of all labor, materials and equipment necessary to complete the work, including excavation and backfilling, in accordance with the plans and specifications and to the satisfaction of the Engineer.

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ITEM NO. 9 ALLOWANCE FOR ASBESTOS REMOVAL

WORK: Under the Item, **ALLOWANCE FOR ASBESTOS REMOVAL**, the Contractor shall furnish all labor, materials, equipment, testing fees, and permits, together with all work incidental thereto, necessary and required for removal and disposal of asbestos containing materials (hereafter, ACM) in the designated site under the jurisdiction of the Department of Parks & Recreation (hereafter, DPR). Specifically the Contractor shall:

1. Remove all asbestos containing/contaminated materials, including but not limited to pipes, fitting and elbow insulation, ACM debris and unclassified ACM contaminated debris from the site.

2. HEPA vacuum the entire work area, rendering the work area free of all visible residue.

3. Encapsulation: After the work area has been rendered free of all visible residue, the asbestos removal Sub/contractor shall furnish all labor, materials, and equipment necessary to encapsulate the entire work area. A thin coat of encapsulating agent shall be applied to all surfaces in the work area from which ACM was removed, in accordance with the specifications, governing regulations, and the directions of the Engineer.

All work shall be done in accordance with the applicable provisions of local law 76/85, amendments of the NYC DEP Asbestos Control Program regulations, these specifications, and directions of the Engineer and project monitor.

The Contractor shall perform all work as called for in the divisions listed below, as described hereinafter:

2.1 General Requirements
2.2 Employee Protection
2.3 Work Area Preparation
2.4 Handling & Removal Procedures
2.5 Clean-up Procedures

Division 2.1 General Requirements

2.1-01 Patents. The Contractor's attention is directed to the fact that certain methods of asbestos abatement indicated in the specifications are covered by patents. To date, patents have been issued with respect to "Negative Pressure enclosure", "Negative Air", "Reduced Pressure" or "Glove Bag".

The Contractor shall be solely responsible for and shall hold DPR and the City harmless from any and all damages, losses, and expenses resulting from any infringement by the Contractor on any patent, including but not limited to the patents described above, used by the Contractor during performance of this agreement.

2.1-02 Qualifications/Experience. The asbestos removal Sub/contractor must be thoroughly experienced in the performance of asbestos abatement work. Within five (5) working days of the bid opening, the successful apparent low bidder shall submit documentation demonstrating that the asbestos Subcontractor meets the following criteria.

1. All asbestos handlers and asbestos handler supervisors performing the removal work shall be NYCDEP and NYSDOL certifed.

2. The asbestos Sub/contractor can assign to and dedicate a minimum of ten (10) full-time handlers and one full-time supervisor for the projected duration of the asbestos portion of the work.

3. The successful apparent low bidder shall document that all handlers and supervisors have at least three (3) years experience in asbestos abatement operations.

4. The successful apparent low bidder must document that the asbestos Sub/contractor has successfully performed at least three asbestos abatement projects of a size, scope, and magnitude similar to the project described in this specification, using techniques per code and hereinafter specified within the last three (3) years.

5. The successful apparent low bidder must be able to provide documentation that the asbestos Sub/contractor has had aggregate billings of at least $200,000.00 for each of the last three (3) years prior to the date of bid opening for this contract.

Within five(5) days of the Agency's request and prior to award, the Contractor shall supply the names and telephone numbers of persons who will verify the qualifications/experience outlined above. DPR reserves the right to verify the above to their satisfaction prior to award. Failure to meet the requirements stated above or to provide verification of said claims may invalidate the bids as being non-responsive. Failure to meet the above described experience requirements will result in the disqualification of the bid. Compliance with the requirements be determined solely by the DPR Capital Projects Bid Review Committee.

2.1-03 Testing and Certification. Materials, equipment, and methods of asbestos abatement are subject to testing and inspection, as required by USEPA, OSHA, NYSDOL, NYCDEP, NYC Buildings Department, and any governing codes, as amended to date, and shall be under the direction of a certified asbestos handler supervisor licensed by the City of New York. The Contractor shall be responsible for the preparation and submittal of all necessary forms so as to obtain a certificate of compliance concerning notification of all required federal, state, and local agencies, including a certification of compliance for equipment and workers, proof of compliance of proper disposal of asbestos materials, and asbestos hauling permits.

All costs for such required tests and certificates shall be borne by the Contractor and shall be deemed to be included in the contract price. All required testing, as set forth in these specifications or as ordered by the Engineer, in addition to those mandated by the codes,

shall be prepared and submitted by the Contractor to an approved independent testing laboratory for testing, which shall submit the test results to this Agency. All such tests and copies of certifications shall be made without any additional expense to the City.

2.1-04 Applicable Standards. The Contractor shall comply with the applicable standards promulgated by the following regulatory agencies and organizations:

A. **EPA** Environmental Protection Agency, Region II
290 Broadway, 21st fl., New York, N.Y. 10007.
Asbestos Coordinator, 9212) 637-4081

B. **OSHA** National Emissions Standards for Asbestos, Occupational Safety and Health Administration, New York Regional Office, 1515 Broadway, New York, N.Y. 10036, Room 3445, (212) 669-8825, Paragraph 1910.1001 Asbestos.

C. **NEC** National Electrical Code (see NFPA).

D. **NFPA** Nation Fire Prevention Association
470 Atlantic Avenue, Boston, Ma. 02201

E. **NIOSH** National Institute for Occupational Safety and Health, 26 Federal Plaza, New York, N.Y. 10007, (212) 264-2560

F. **DHHS** Department of Health and Human Services,26 Federal Plaza, New York, N.Y. 100007, (212) 264-2560.

G. **Federal Specifications.** Specification Sales (3F21)
Building 197, Washington Navy Yard
GS Washington, D.C. 20407

H. **ANSI** American National Standards Institute.
1430 Broadway, New York, N.Y. 10018

I. **ASTM** American Society for Testing & Materials
100 Barr Harbor Drive, West Conshohocken, PA 19428

J. **DEP** NYC Department of Environmental Protection,
59-17 Junction Boulevard, Elmhurst, N.Y. 11373

2.1-05 Definitions

"Abatement Activities" shall mean all activities from the initiation of work area preparation through successful clearance air monitoring performed at the conclusion of an asbestos project.

"Ambient Air Monitoring" shall mean measurement or determination of airborne asbestos fiber concentrations outside, but in the general vicinity of, the workplace.

"Asbestos Contaminated Objects" shall mean any objects which have been contaminated by asbestos or asbestos containing material.

"Baseline Monitoring" shall mean measurement or determination of airborne asbestos fiber concentrations inside the work area and outside a building prior to starting abatement activities."Clearance Air Monitoring" shall mean an instrumentality thereof, self-employed person, company, unincorporated association, firm, partnership, or corporation, and any owner or operator thereof, which engages in an asbestos project or employs persons engaged in an asbestos project.

"Demolition" shall mean the dismantling or razing of a building, including all operations incidental thereto, for which a demolition permit from the New York City Buildings Department is required.

"Disturb" shall mean any action taken which may alter, change, or stir, such as, but not limited to, the removal, encapsulation, enclosure, or repair of asbestos containing material.

"Fiber" shall mean an acicular single crystal or a similarly elongated polycrystalline aggregate which displays some resemblance to organic fibers by having such properties as flexibility, high aspect ratio, silky luster, axial lineation, and others, and which has attained its shape primarily through growth rather than cleavage.

"Friable Asbestos Material" shall mean any asbestos or any ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand, or other mechanical pressure.

"Incidental Exposure" shall mean occupational exposure to asbestos fibers caused to oneself by disturbing ACM during the performance of one's job, except during the performance of an asbestos project.

"Isolation Barrier" shall mean the construction of partitions, the placement of solid materials, and the plasticizing of apertures to seal off the work place from surrounding areas and to contain asbestos fibers in the work area.

"Log" shall refer to an official record of all activities that occurred during the project and shall identify the building owner, agent, Contractor, workers, and other pertinent information, e.g. equipment and malfunctions, contamination beyond the work area, etc.. "Outside Air" shall mean the air outside the work site. "Renovation" shall mean an addition or alteration or a change or modification of a building or the service equipment thereof, that is not classified as an ordinary repair, as defined in Section 27-125 of the Administrative Code of the City of New York.

"Repair" shall mean corrective action using specified work practices, e.g. glovebag, plastic tent procedures, etc. to minimize the likelihood of fiber release from minimally damaged areas of ACM.

"Replacement Materials" shall mean any material used to replace ACM that contains less that 0.01% asbestos.

"Shift" shall mean a worker's or simultaneous group of workers' complete daily term of work.

"Surface Barriers" shall mean the plasticizing of walls, floors, ceilings, and fixed objects within the work area to prevent contamination from subsequent work.

"Waste Decontamination Enclosure System" shall mean the decontamination enclosure system designated for the controlled transfer of materials and equipment, consisting of a washroom and a holding area.

"Work Area" shall mean designated rooms, spaces, or areas of the building or structure where asbestos abatement activities take place.

"Work Place" shall mean the work area and the decontamination enclosure system.

"Work Site" shall mean premises where asbestos abatement activity is taking place and may be composed of one or more work areas.

2.1-06 Abatement Operations Protocol

1. On-Site Meeting: The Engineer shall schedule, and the Contractor and the asbestos Subcontractor shall attend an on-site meeting. At the on-site meeting, the parties shall determine quantities of materials to be removed, schedule of work, and any complicating or extraordinary requirements. If the asbestos removal Sub/contractor needs reference drawings, the Contractor shall ensure to provide them. Insofar as it does not violate governing regulations, the asbestos removal Sub/contractor shall coordinate their efforts with those of the Contractor.

3. Operations Plan: Within 48 hours of the on-site meeting, the asbestos Subcontractor shall prepare, and submit to the Engineer for review, the Subcontractor's plan for the abatement project. Such plan shall include, but not be limited to, the following information: DPR facility number, name, and address, quantities of ACM to be removed, Contractor's proposed work schedule & work methods, and project cost, based on bid unit item prices.
4. NYCDEP ACP forms/USEPA & NYSDOL filings. Within 48 hours of the on-site meeting, the asbestos Subcontractor shall fill out and complete the required NYCDEP ACP-5, ACP-7, ACP-9 forms for specified facilities and submit them for the Engineer's review, approval, and signature. Upon the Engineer's request, the

asbestos Subcontractor shall amend and file said ACP forms. The Agency reserves the right to determine which form shall be prepared, amended, signed, and submitted. Note: DPR facilities are City properties, and are thus exempt from NYCDEP filing fees.

5. For all asbestos abatement undertaken under this contract, the asbestos Sub/contractor shall ensure to fill out, complete, and mail to the proper authority the required USEPA and NYSDOL notification forms. Note: DPR facilities are not exempt from NYSDOL filing fees. Such fees are deemed to be included in the bid price and are to be paid by the Contractor without additional expense to the City.

6. Work Orders: Upon NYCDEP approval of ACP forms, the Engineer shall schedule the abatement. The Agency reserves the right to determine the schedule and order in which work areas are abated and revise work orders as needed by the Agency. The Contractor shall comply with said work order directives. Unit bid prices shall remain the same despite work order revisions. The Contractor is cautioned that no payment shall be made for work not authorized by the Engineer via work order, work order revision, approved change order, or unit item overrun.

   Though the Engineer consults with the abatement and project monitoring Contractors on these matters, the Engineer retains the final word in all decisions regarding which work areas are abated, the order in which facilities are abated, and the quantities of ACM removed and replaced.

7. Working Hours: The work shall be performed during regular working hours, here defined as weekdays from 8:00 AM to 3:30 PM, unless the Contractor requests and is granted by the Engineer, written authorization to work other than regular working hours, as defined above or as the Engineer directs, as defined above.

Note: The Contractor shall perform such work at no additional cost to the City. The Contractor is advised that the urgency of some projects shall require abatement work at any hour, including weekdays and holidays.

8. During the course of work, all project logs and time sheets required under this contract shall be subject to the review, approval, and verification of the Engineer.

9. Project Log: The Contractor shall provide a permanently bound log book, 8.5" x 11" in size. At a minimum, each project log shall contain the following information for each assigned facility:

   A. Agency property number (available from Engineer), facility name, address, location, and project duration.
   B. Contractor name, address, phone, and fax number.
   C. A list of Contractor personnel assigned to the project, including photocopies

of NYC-DEP certified asbestos handler and supervisor identification cards.

D. Labor Law Section 220 sign-in sheets.

E. A day-to-day record of personnel entering the work area, short descriptions of the days work, and a record of any significant or unusual events occurring during the course of work, including, but not limited to, inspections and observations of unusual incidents (e.g. barrier damage, contamination beyond the work area). The project narrative is to be kept by the asbestos handler supervisor. All entries are to be made in waterproof permanent ink. Under no circumstances shall pencil entries be allowed. A pen shall be strung or otherwise connected to the log to prevent removal from the log. All entries shall be reviewed and countersigned by the Engineer.

The Agency reserves the right to request and receive the project log at any time during the abatement project. Further, the Agency reserves the right to request and receive the completed project log for a specific abatement no less than 48 hours after final clearance has been achieved at that facility.

Note: The project logs are a required submittal for payment. Payment requests, partial or final, shall not be processed until all submittals required by governing regulation, this specification, and the Engineer have been submitted, reviewed, and approved by the Engineer.

2.1-07 USEPA NESHAPS.

Should work order letters indicate the project is urgent the Contractor shall notify the USEPA NESHAPS coordinator of the start of work immediately. When work order letters indicate non-urgent abatement work, the Contractor shall notify the USEPA NESHAPS coordinator by letter, postmarked 10 days before activity begins if more than 260 linear feet or 160 square feet of ACM is to be removed. Whatever the situation, the following information shall be included in the Contractor's notice to USEPA NESHAPS:

A. Name & address of building owner & operator.

B. Project description, including:
1.size/amount of ACM removed/abated (in linear feet, square feet, etc.)
2.(if known) facility age (construction/renovations)
3.facility usage (office, school, industrial)

C. Description of investigation techniques employed in the survey.

D. Building address/location.

E. Work schedule, including start and completion dates.

F. ACM abatements methods employed.

G. ACM removal procedures employed.

H. Name & location of disposal site.

I. Name, title, and address of governmental representative sponsoring project.

2.1-08 Permits, notification letters, filing fees, etc.

The Contractor shall obtain and pay for all permits, licenses, certificates, inspections, and all other legal fees required in connection with the work.

This shall include payment of all building, hauling, and dumping purpose charges or water charges imposed by the NYC Departments of Buildings, Environmental Protection, Highways, and the Bureau of Water Register. If, in the City's discretion, water is made available from NYC sources for the Contractor's use during the work of this contract, the Contractor may obtain a **free hydrant permit** and **free water permit** from the Dept. of Water Supply,Gas, and Electric Bureau of the Water Register's Office. The Contractor shall be required to appear at the Office of the Water Register in the borough in which the work is being performed. The Contractor shall submit a copy of the contract, properly authorized by the Board of Estimate or the budget director that permits the Dept. of Resources to issue such permits.

If conditions do not allow the use of NYC water sources, the Contractor must obtain their own source of water. No direct payment shall be made for water obtained by the Contractor from other than City sources, but the cost therefore shall be deemed included in the various items of the contract.

2.1-09 Temporary Light & Power.

The Contractor shall furnish all materials, permits, equipment, fuel, labor, and fees to provide temporary light and power at each facility. If there is no existing service at the site, the Contractor shall provide emergency generators, overhead, or buried temporary feeders of any other approved method of obtaining the temporary light and power. The Contractor shall make use of this temporary power and light throughout the duration of the contract. All costs required for this temporary light and power shall be considered to be included in each bid item of this contract. No direct payment shall be made for temporary light and power installed by the Contractor from other than City sources but the cost therefore shall be deemed included in the various items of the contract.

2.1-10 Site Security.

Each site shall be closed and sealed to the public during the abatement project. If the asbestos abatement is not completed within one (1) work area in a day, the Contractor shall properly seal all access points, as approved by the Engineer. All loose ACM shall be removed from the site at the end of the day by the Contractor. All costs required for closing, sealing, and securing work areas in each facility shall be considered to be included in each bid item of this contract.

In addition, if deemed necessary by the Engineer, the Contractor shall take all necessary

steps to secure the facility overnight, including, but not limited to, providing locks, covering doors, windows, and other points of access with plywood, and providing for overnight security guards. No direct payment shall be made for additional security services and all such costs therefore shall be deemed included in the various items of the contract.

2.1-11 Scaffolding.

The Contractor shall furnish all the scaffolding of whatever type is necessary to do the work of this contract, subject to requirements of the NYC Building Code, the specifications, rules, and regulations governing ACM removal work, and the directions of the Engineer. Any scaffolding thus used, erected, and later dismantled must be employed in a manner that does not damage the walls, floors, and ceilings of the work area. Any damage caused by the Contractor in the course of their operations must be repaired in kind by them at no cost to the City, to the satisfaction of the Engineer and the Agency. No direct payment shall be made for scaffolding and all such costs therefore shall be deemed included in the various items of the contract.

Division 2.2 Employee Protection.

2.2-01 The Contractor shall provide workers with respirators which have been approved by the National Institute for Occupational Safety and Health (NIOSH). The Contractor shall supply workers with a sufficient quantity of respirator filters. At the very least, each worker shall not use the same pair of filters for more than one (1) work day, receiving from the Contractor a new pair of unused, functional filters at the start of each new work day.

2.2-02 The Contractor shall instruct and train workers in proper respirator use. Each worker shall always wear a respirator, properly fitted on the face, and equipped with a pair of filters in the work area at all times, until disposal of the filters at the completion of the work day.

2.2-03 Should bulk sample analysis (by a NVLAP approved laboratory) indicate amphibole asbestos (including amosite, crocidolite, anthophyllite, tremolite, and actinolite asbestos)to be removed, the Contractor shall provide NIOSH-approved full facepiece Type C air respirators for workers and, if requested, the Engineer and the project monitor, for the length and duration of the project.

2.2-04 The Contractor shall set up a change room and a shower outside the work area. If permanent shower facilities are not suitably located or available, a temporary shower shall be constructed by the Contractor.

2.2-05 Without exception, all workers shall:
(a) Remove street clothes in the change room and put on disposable coveralls, head covers, foot wear, and NIOSH-approved respirator with filters before entering the work area
(b) Remove the disposable coverall, head covers, and foot wear in the work area before leaving the work area

(c) Still wearing the respirators, proceed to the showers and remove respirators while showering with soap and water and
(d) Shower at the end of each day's work before entering the change room to change back into street clothing.

2.2-06 Workers shall not eat, drink, smoke, or chew gum or tobacco in the work area. To engage in any of these activities, the workers shall first follow the exit procedure specified by NYCDEP, then dress in new clean disposable coveralls. The new coveralls can be worn when re-entering the work area.

2.2-07 Protective equipment for the Engineer. At the request of the Engineer, the Contractor shall make available for the length and duration of the project at each abated facility, one complete set of respiratory equipment, including half face respirator, required Fit test, Tyvek suits, and fresh filters so the Engineer can inspect the work areas. For assigned facilities where a decontamination chamber has been built to facilitate abatement, the Contractor shall also provide a lockable storage locker for use by the workers for the length and duration of the work. See also Division 2.2-03 above, for situations involving the removal of amphibole asbestos.

2.2-08 Protection of furniture and equipment: Prior to the start of work, the Contractor shall remove all moveable furniture and equipment from a work area and cover all furniture and equipment that cannot be removed from the work area. At the conclusion of the work, after final air tests have been received, reviewed, and approved by the Engineer, the Contractor shall remove all plastic coverings from the work area, and the Engineer has surveyed and approved the final clean-up, the Contractor shall reinstall all previously removed moveable furniture and equipment. Any damage caused by the Contractor in the course of their operations must be repaired in kind by them at no cost to City and to the satisfaction of the Engineer and the Agency. No direct payment shall be made for protecting furniture and equipment. All such costs therefore shall be deemed included in the various items of the contract.

2.2-09 Entry & exit procedures: All workers and authorized DPR personnel wearing protective clothing and respirators shall enter and exit through the worker decontamination system.

2.2-10 Special operations/special precautions:

A. For all boiler room projects or projects of similar complexity, including, but not limited to, abatements of equipment, pool filter and fan rooms, high ceiling pipes/spray-on, etc., the Contractor shall prepare a detailed plan of action, including any special provisions for work area preparation, ACM removal, and clean-up techniques, as well as measures intended to prevent fiber release. The following information should be included:

a. Location(s) of ACM control area, decontamination chamber(s), and negative

air pressure filtration units.

b. Sequencing of ACM removal operations.
c. Types of wettings agents and encapsulant to be used.
d. Air monitoring protocols.
e. Contamination controls.
f. Emergency procedures for fire and medical emergencies, as well as failure of seals.

B. It is the Contractor's sole responsibility to plan, coordinate with air monitors, and perform the work in such a manner that it is brought to successful completion. This includes preparation, removal, and final cleaning, to an acceptable NYCDEP standard.

C. Should the project be of significant scope and size, the Engineer may call a special on-site meeting between the Engineer, air monitor, and ACM removal Contractor. The Contractor is required to attend. The agenda for this meeting shall include, but not be limited to, the following topics:

a. Scope of work, work plan, and schedule.
b. Safety & health precautions: protective clothing, equipment, and decontamination procedures.
c. Testing laboratory air monitoring protocol.
d. Contractor's work procedures: work area preparation, decontamination set-up, wetting agents employed, ACM removal methods, respirators, procedures for decontamination of objects in "Decontamination & Abatement" sections, methods of handling and removing ACM, clean up procedures and equipment, signs and labels, fire exits, and emergency procedures.
e. The Contractor's plan for 24 hour facility security, both for preventing theft of Contractor's equipment and for barring entry of curious but unprotected personnel from work areas.
f. Temporary utilities.
g. Handling of furniture, books, and other objects in the work area prior to start of work.
h. Documentation of compliance with environmental laws and standards.

D. In conjunction with the conference, the Contractor shall accompany the Engineer on a walkthrough of the facility to document the existing condition of finishes and furnishings, review overall work plan, location of fire exits, fire prevention equipment, water supply, and temporary power and lighting.

E. Should testing indicate the residual asbestos fibers or asbestos containing dust is in the air or on surfaces in the work area or other areas of the site which might have concentrations of less than 0.01 f/cc or below preabatement contamination by the Contractor's operations. The work areas in question must be recleaned and retested until environmental air clearance samples indicate particulate ambient air quality

(whichever is higher) using standard air sample collection technique and PCM sample analysis.

Division 2.3 Work Area Preparation: Asbestos removal shall not commence until work area preparation has been completed.). The Contractor shall isolate all HVAC systems in the facility. Isolation barriers that seal off all openings, including but not limited to windows, corridors, doorways, skylights, ducts, grilles, diffusers, and any other penetrations of the work area will be constructed using two (2) layers of at least six (6) mil. Fire retardant plastic sheeting, sealed with tape. All seams in system components that pass through the work area must be sealed. Doorways and corridors which will not be used for passage during the contract period must also be sealed. The Contractor shall shut down and lock out existing electrical power to all work areas and provide temporary power and light and ensure safe installation of temporary power sources and equipment used where high humidity exists and/or water will be sprayed, in accordance with the plans, specifications, the diections of the Engineer, and NYCDEP Asbestos Control Regulations.

2.3-01 Decontamination Enclosure: The Contractor shall set up a decontamination enclosure system, as recommended by NYCDEP. It shall be installed or constructed prior to installation of plastic sheeting in the work areas and before disturbing any ACM. The decontaminationenclosure must consist of a changing room, shower, waste area, equipment room, holding area, and air locks.

2.3-02 System Isolation: The Contractor shall isolate all HVAC system(s) in the facility. They shall be shut down and isolation barriers installed over all openings, including, but not limited to, windows, skylights, ducts, corridors, doorways, etc. All other system components that pass through the work area shall also be sealed. All objects remaining within the work area shall be pre-cleaned and enclosed with two layers of 6 mil. plastic sheeting and sealed with tape. Floor, ceiling, and wall surfaces shall be sealed with a minimum of two layers of 6 mil. plastic sheeting. The plastic layers on the floor and ceiling shall overlap twelve inches (12") onto the walls before the walls are covered with plastic sheeting.

2.3-03 Emergency Exits. The Contractor shall establish emergency and fire exits from the work area. If there is only one means of egress from the work area, the holding area of the waste decontamination enclosure may branch off from the equipment/decontamination room. Thus the equipment room alternates as a waste washroom.

2.3-04 Signs. The Contractor shall post signs, both in English and Spanish, in accordance with OSHA specifications. Signs shall be posted at all approaches to the work place, including internal door ways which provide access to the work place. These signs shall bear the following information:

DANGER
CANCER & LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS & PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

2.3-05 Engineering Controls. The following procedures shall be followed during the removal & abatement phases of large projects involving the removal of greater than 260 linear or 160 square feet of asbestos.

a. Negative air pressure ventilation equipment shall be utilized at all times.
b. On loss of negative pressure or electrical power, all abatement activities shall stop immediately, and the Contractor shall evacuate the workers and seal all air inlets and decontamination systems. Abatement activities shall not resume until power is restored and negative pressure ventilation equipment is operating again.
c. Routine smoke testing on critical barriers and air monitoring shall be performed by the Contractor to prevent any fiber release beyond the work area.
d. Damage and defects in the decontamination enclosure system and the plastic barriers shall be repaired immediately by the Contractor.
e. All inspections, observations, and unusual incidents shall be documented in the daily project log by the Contractor.

2.3-06 Pre-abatement Clean-up. Prior to installation of surface barriers, the Contractor shall wet wipe and HEPA vacuum all existing contaminated surfaces. Pre-abatement clean-ups shall be performed at no additional cost to the City.

Division 2.4 Handling & Removal Procedures.

2.4-01 The Contractor shall remove ACM by wet methods. Dry methods are prohibited under this contract.

2.4-02 The ACM shall be sprayed with amended water (surfactant or any wetting agent) to enhance complete saturation. Sufficient time shall be allowed for penetration of amended water into the ACM prior to removal or disturbance. Fluffy friable materials shall be thoroughly wetted on all surfaces while work is being conducted. Accumulation of standing or free water in the work area is prohibited.

2.4-03 The ACM shall be stripped in small sections before starting the next section. Pack the ACM while it is still wet into sealable double plastic bags of 6 mil. thickness minimum.

2.4-04 Large components removed intact that cannot be containerized shall be maintained wet and wrapped in at least one layer of 6 mil. polyethylene sheeting, secured by sealing tape.

2.4-05 Movable glovebag procedures on pipe lagging shall be done using commercially available glovebags of 10 mil. clear PVC or polyethylene, appropriately sized for the project. Glovebags may be shifted down a pipe or duct but shall not be moved from the initial to another pipe, nor reinstalled on the initial pipe once removed. Moveable glovebag procedures applied to removal of greater than 1,000 linear feet of pipe lagging shall require establishment of isolation barriers and engineering controls.

2.4-06 The pipe insulation diameter shall not exceed one half the bag working length above the attached gloves.

2.4-07 The ACM within the secured glovebag shall be wetted with amended water prior to stripping.

2.4-08 A 6 mil. plastic bag shall be slipped around the glovebag while it is still attached to the pipe. The bag shall be detached from the pipe by removing the tape or cutting the top with a blunt scissor.

2.4-09 After completion of all stripping work, the surface from which the ACM has been removed shall be cleaned to remove all visible residue.

2.4-10 After the work area has been rendered free of visible residues, a thin coat of an encapsulant shall be applied to all surfaces in the work area from which the ACM was removed.

2.4-11 All plastic sheeting, tape, cleaning material, clothing, and all other disposable materials used in the work area shall be packed into sealable double plastic bags

2.4-12 All bags and drums containing ACM shall be labelled with the following:

CAUTION CONTAINS
ASBESTOS FIBERS AVOID
CREATING DUST
BREATHING ASBESTOS DUST MAY CAUSE
SERIOUS BODILY DAMAGE

2.4-13 All bags and drums shall be cleaned before leaving the work area.

2.4-14 USEPA Notice/Waste Disposal

A. EPA notification. The Contractor is required to notify the regional federal EPA office prior to starting removal operations for instructions regarding proper disposal of ACM waste.

B. ACM waste disposal protocol: NOTICE TO ALL CONTRACTORS OR HAULERS WHO DO NOT HAVE PERMITS TO DUMP HAZARDOUS WASTE: Obtaining the proper permits may take over a month. The following procedure should be instituted immediately upon award of contract:

1. Call NYSDEC to obtain an application for Part 364 "Permit for Hauling Waste",(212)488-3862.
2. Complete application and have it signed by NYC Dept. of Sanitation representative, Room 726, 125 Worth Street,(212)219-8090.
3. Mail completed & signed form with the proper fee to NYSDEC Division of Solid Waste, 50 Wolf Road, Albany, N.Y. 12233.
4. After hazardous waste permit is secured, dispose as follows:
   a. Notify Bureau of Waste Disposal Operations Control Office, (212) 566-5326, 48 hours in advance and complete NYC Waste Disposal Manifest.
   b. Inform tally clerk at scale room at DOS dump that material is asbestos hazardous waste. They will direct you to a designated area. NOTE: ALL WASTE MATERIAL MUST BE HAND UNLOADED. NO DUMPING WILL BE ALLOWED.
   c. Obtain a signed dump ticket indicating that material is asbestos waste and the location from whence it came. Dump ticket must also indicate the amount of waste in cubic yards.
   d. Submit dump tickets with all payment requisitions.

C. Disposal. Submit all landfill dump tickets and hazardous waste manifest with application for payments. The Contractor shall obtain a permit from NYSDEC for hauling hazardous waste.

2.4-17 Removal and Disposal of Asbestos Containing Roofing Materials:

State and City regulations describe two different methodologies for removing asbestos containing roofing materials, including, but not limited to, built-up roofing material, flashing tar, roofing paper, and shingles, hereafter referred to as ACRM. Both methodologies are described below, one based on NYSDOL applicable variances AV83 and AV90, the other based on NYCDEP attachments FR and FT.

The Agency shall determine which methodology the Contractor shall employ, i.e. whether the work is performed under an ACP-5 or ACP-7 and ACP-9 regimen. In the former case, NYSDOL regulations shall be followed. In the latter, NYCDEP viscous foam protocol shall be observed. Whichever methodology NYCDEP requires, the cost for implemented said methodology shall be considered part of the bid price for the roofing material item and shall be performed at no additional cost to the City.

NYSDOL AV83 and AV90:

A. The entire roof shall be considered the work area.

B. Industrial Code 56-8.1(b) shall be followed as per cordoning off of the work area and posting of warning signage.

C. During ACRM removal operations, only certified asbestos removal and air monitoring personnel shall be permitted in the work area.

D. One worker shall be assigned the task of continuously applying amended water to the flashing tar to be removed while the work is in progress. If more than one section of flashing tar is being abated simultaneously, at least one worker shall be assigned the task of continuously applying amended water to each removal site while the work is in progress.

E. The Contractor shall provide personnel protective equipment to asbestos removal workers, in accord with Industrial Code 56-4.1(d).

F. All communicating openings on the roof level and one floor below, including but not limited to windows, doors, vents, ducts, and grilles, shall be sealed with two layers of at least six mil. plastic.

G. Any roofing shingles, roofing paper, and built-up roofing materials shall be cut and removed using manual methods whenever possible. Roof flashing shall be removed and placed into at least six mil. plastic bags. The bagging shall be doubled before passing through the waste decontamination system.

H. All power operated tools utilized shall be provided with HEPA filtered local exhaust ventilation, as required by Industrial Code 56-7.1(j).

I. In addition to the requirements of Industrial Code subpart 56-17, air monitoring of the entire work area shall be conducted daily. Sampling and analysis turnaround time shall not exceed twenty four hours. If air sample results indicate any airborne asbestos fiber concentration(s) at or above 0.01 fibers per cubic centimeter, or the background level, whichver is greater, wotrk shall be stopped immediately, methods shall be altered to reduce the airborne asbestos fiber concentration(s) to the aforementioned level and work shall not resume until that level is attained.

J. A personal decontamination enclosure system, which may be remote from the work area, but otherwise complies with the provisions of Industrial Code 56-10 shall be utilized.

K. A waste decontamination enclosure system, which may be remote from the work area, but otherwise complies with the provisions of Industrial Code subpart 56-10 shall be utilized.

L. Not less than fifteen(15) days prior to the commencement of a project utilizing the terms of NYSDOL applicable variance AV83 and/or AV90, the Contractor shall submit a copy of the completed and signed DOSH 465 form entitled 'Non-friable Asbestos or Asbestos Material Roofing Project(s)' to the NYSDOL Engineering Services Unit in Albany, N.Y.

M. A copy of AV83 and/or AV90 and a copy of the completed and signed DOSH 465 form entitled 'Non-friable Asbestos or Asbestos Material Roofing Project(s)' shall be conspicuously displayed at the entrance to the personal decontamination enclosure.

N. All other applicable provisions of Industrial Code 56-1 through 56-17 shall be observed.

NYCDEP Variance Attachments FR and FT:

A. In addition to supplying employees with the ususal respiratory protection and personal protective clothing asbestos abatement Subcontractors shall supply workers and the Engineer with well-tractioned and corrctly fitting rubber boots.

B. To prevent the spread of dust released during cutting and removal of ACRM, the Subcontractor shall provide a foam or viscous fluid to be applied to the ACRM prior to and during removal. Subject to the approval of the Engineer, the foam/viscous fluid shall comply with the following requirements:
a.It shall be non-toxic and not require special respiratory protection for handling.
b.It shall coat and maintain a stable blanket, minimum one inch(1") thickness, for the duration of the removal process.
c.It shall wet the ACRM and remain wet during the bagging process.
d.It shall leave an identifiable colored residue when it dissipates.
e.It shall not require special disposal.

C. A pre-abatement survey of the work areas shall be conducted to ensure that abatement activity does not result in adverse effects to the interior of the building or the structural stability of the roof. The Engineer and the Subcontractor shall be in attendance.

D. Abatement shall not be carried out during adverse weather, e.g. precipitation, high winds, etc.

E. The work area shall be cordoned off and only certified asbestos removal personnel shall have access to the work area.

F. Electrical power in the area shall be shut down and isolated.

G. Movable objects shall be removed from the work area or kept in one location and wrapped in one sheet of six (6) mil. plastic sheeting. Fixed objects, including perimeter walls, bulkheads, cooling towers, ducts, roof drains, roof hatches, mechanical system vents, and other rooftop appurtenances shall be covered in one sheet of plastic to a minimum height of six feet (6').

H. The worker decontamination unit shall be constructed at an entry/exit from each work area, in accord with all governing regulations. At a minimum, it should include a shower room equipped with shower head(s) and a clean room. If NYCDEP approves variance from 15 RCNY Section 1-117(a) and in the case of ACRM removal of more than one thousand (1,000) sq.ft. 15 RCNY Section 1-118(a), remote decontamination units shall be constructed instead.

I. A separate waste decontamination facility shall be located at an entry/exit from each work area, in accord with governing regulations.

J. Provisions shall be made to ensure a safe and adequate air supply to the affected building(s). Either (1) all vents, hatches, drains, skylights, air intakes, windows, and doors opening onto the roof and all other openings shall be sealed with two layers of

six(6) mil. plastic or fitted with HEPA filters where appropriate, or (2) temporary extensions may be installed to a height of ten feet (10') to ensure adequate air exchange. Drains may be equipped with five(5) micron filtering systems in lieu of being sealed.

K. Prior to actual removal, the ACRM shall be blanketed and wetted with a minimum one inch (1") coating of acceptable foam or viscous fluid which shall be maintained for the duration of the removal until the material is bagged. The foam/viscous fluid shall be confined to the work area.

L. Manual methods of removal shall be employed. If the Engineer deems it necessary, the Subcontractor shall employ hand held power tools to drill, cut into, or otherwise disturb the ACRM. Should these devices be employed, the power tools shall be equipped with HEPA filtered local exhaust ventilation and operated to prevent potential fiber release.

M. The asbestos abatement Subcontractor shall make portable HEPA vacuum machines available during abatement.

N. Cleanup procedures shall involve removal and bagging of all ACRM, visible accumulations of ACM waste, excess foam/viscous fluid and all debris, and shall be followed by a wet cleaning.

O. All tools shall be wet cleaned and HEPA vacuumed and then removed from the work area.

P. The work area shall be allowed to dry completely before the visual inspection is conducted. This inspection is to be performed by the Engineer and project monitor and shall confirm the absence of ACRM, ACM waste or debris, and excess foam/viscous fluid.

Q. Should the work area fail the visual inspection, the abatement Subcontractor shall perform additional wet cleaning and HEPA vacuuming until it passes visual inspection and final clearance air monitoring. When the visual inspection is successful and final air clearance levels of <0.01 f/cc hace been achieved, all plastic may be removed.

R. Where vertical or sloping sections of ACRM are to be abated and an ACP 7 is filed instead of an ACP 5, the provisions of NYCDEP ACP Variance Attachment FT shall be observed.

S. When NYCDEP requires use of FT and/or FR regime and where the contract calls for the removal of vertical and/or sloping sections of ACRM, the Subcontractor shall follow the provisions of NYCDEP Attachment FT.

2.4-18 NYC Law Dept. Litigation Effort. NYC Law Dept. is attempting to recover from the manufacturers and suppliers of asbestos as much of the City's costs for ACM management and abatement as possible. Each City Agency, including DPR, has been directed to assist this effort. Upon the Engineer's request, the Contractor shall comply with Law Dept. needs in, but not limited to, the three ways described below:

A. Defendant Inspections. Prior to abatement, defendant representatives shall inspect a site and, using blue index cards, shall tag locations where litigation samples shall be

taken for the defendant and the City. Should the Contractor be on-site, and actual ACM removal not yet begun, the Contractor shall allow the defendant's representatives to make this inspection.

B. Bulk Sampling. At the request and direction of the Engineer, the Contractor shall take bulk samples during ACM removal operations and fill out the corresponding change of custody forms, in accordance with guidelines established by the NYC Law Dept. and described below.

For samples of previously tagged materials (see paragraph A. above) NYC Law Dept. shall provide pre-labeled sample bags and change of custody forms. The Contractor shall collect samples, clearly and legibly label the sample, and note the date of sampling and sample source location, then sign the accompanying change of custody form. Upon completion of the sampling, the Contractor shall give the samples and custody forms to the Engineer, who shall contact NYC Law Dept. and arrange a pick up of the material.

Bags shall come in two different sizes, as sample size varies with material. For samples of duct, tank and fitting insulation, the Contractor shall use 4" x 5" sample bags. For samples of pipe insulation, samples. Three samples (a, b, and c) shall be taken of each tagged material. A large sample shall be taken of each tagged material. Two 1" x 1" core samples which are broken off from each large sample shall be taken and placed in sample bags labelled "B" and "C". The remaining large sample shall be placed in sample bags labelled "A".

C. Preservation of Evidence. The Contractor shall instruct their employees to look for and preserve any evidence which may identify the manufacturer of ACM, such as labels or markings on insulation materials, the backs of ceiling tiles, bags, or cartons, and inform the Contractor or the Engineer when such items are found on site. Upon discovery of such materials, the Contractor shall make a record of who found the evidence and the location of said evidence and inform the Engineer. The Engineer shall then contact the NYC Law Dept. and make arrangements with Law Dept. personnel to photograph the evidence on site and transfer evidence to the Law Dept.

Division 2.5 Clean up procedures. There shall be at least three phases of clean up work for each work area.

2.5-01 Phase One.

A. Visible accumulations of loose ACM waste shall be cleaned up at least once each working day and shall be maintained wet until cleaned up.

B. During the clean up, such accumulations shall be containerized using non-metallic dust pans, non-metallic squeegees, or HEPA filtered vacuums. Metal instruments (shovels, etc.) shall not be used to pick up or move accumulations of ACM waste, or

any other debris within or in the vicinity of isolation/surface barriers.

C. All work area surfaces shall be cleaned of all accumulations of dust on a daily basis via HEPA filtered vacuum or wet cleaning methods.

D. As appropriate, after each shift change and meal break, the worker decontamination enclosure system shall be wet cleaned & HEPA vacuumed. Once ACM waste removal is complete the decontamination enclosure system shall be wet cleaned twice using wet cleaning methods.

E. Should excessive water cause flooding in the work area, all work shall stop until the water is collected and disposed of properly.

2.5-02 Phase Two. After the first cleaning of visible accumulations, the Contractor shall wait 24 hours to allow dust to settle, then workers shall wet down all surfaces of the work area. The clean layer of the surface barriers shall be removed from walls and floors. Isolation barriers shall remain in place throughout the clean-up. The decontamination enclosure system shall remain in place and be utilized.

2.5-03 Phase Three. After the second cleaning, the work area shall be vacated for 12 hours to allow any remaining fibers to settle. Then all objects and surfaces in the work area shall be HEPA vacuumed and wet cleaned, followed by a second 12 hour waiting period. If air tests indicate fiber counts greater than pre-abatement ambient levels, an additional clean-up shall take place. The process shall be repeated until post abatement air tests indicate acceptable levels of fiber content, as per NYCDEP standards. Once clearance standard has been achieved, the Contractor shall remove the remaining plastic surface and isolation barriers.

Division 2.6 Project monitoring. The abatement Sub/contractor shall ensure that and be responsible for conducting personal project sampling for each asbestos handler and supervisor employed on this project, in accordance with applicable rules and regulations.

a. Personal project monitoring shall be conducted during the first full day of abatement to accurately determine the airborne concentrations of asbestos to which workers are exposed.

b. Additional personal samples shall be taken when there is a change in the type of material being removed from a specific location.

c. Personal project monitoring shall be conducted in accordance with NIOSH standard analytical methods for asbestos, 7400 method, in accordance with CFR 1928.58, Appendix A.

d. Samples shall be taken in such pattern and frequency as to represent with reasonable accuracy the exposure level of all workers. The recommended percentage of workers shall be twenty percent(20%) at a minimum.

MEASUREMENT AND PAYMENT:

A. Payment Submittals: In addition to the requirements of Chapter IX "Partial & Final Payments" of the Standard Park Legals, the Contractor shall submit the following with their partial and final payment requisitions:

1. One (1) USEPA, NYSDOL, NYCDEP notifications for each abatement project undertaken under this contract during the payment period.
2. One (1) waste manifest report for each abatement project undertaken under this contract during the payment period.
3. One (1) exposure/project logs for each abatement project undertaken under this contract during the payment period.

Should the Contractor fail to meet the submittal requirements listed above, the payment requisition shall not be processed until the outstanding requirements are met.

MEASUREMENT AND PAYMENT: The amount indicated in the bid book is an assumed estimated amount which may vary from the actual amount to be paid to the Contractor during the term of this contract.

Payments will be based on clear and legible copies of paid bills or invoices detailing the materials, its purpose, location where installed, including the date it was installed.

For work performed, the Contractor shall receive payment in accordance with Chapter VI "Changes and Extra Work" Articles 25, 26, 27 and 28 of the Agreement.

The Contractor warrants that the cost of materials is the same as or lower than the costs charged to other customers of the Contractor for comparable materials. In addition, the Agency shall have the right to pay less than the costs submitted by the Contractor for materials when it is determined that the Contractor should have been able to purchase such materials at a lower cost than actually paid by the Contractor.

The Contractor will be reimbursed for equipment rentals. If rental cost exceeds cost of purchase, then tool shall be handed over to a Department of Parks and Recreation designated storage yard.

All payments for materials and equipment shall be subject to audit by the Department of Parks and to post-audit by the Comptroller.

In order to facilitate post-audit by the comptroller, the Contractor agrees to maintain adequate fiscal records of its expenditures under this agreement for a period of six (6) years unless notified otherwise by the City.

The allowance for this item is $ 20,000.00 Dollars for the life of this Contract.

END OF PAGE

ITEM NO. 10 STUMP REMOVAL OVER 6" TO 12" IN DIAMETER

WORK: Under this item, the Contractor shall remove and dispose of designated existing stumps over six (6) inches in diameter. All work shall be performed in accordance with the plans and specifications by experienced workmen to the satisfaction of the Engineer.

SPECIAL REQUIREMENTS FOR LONGHORNED BEETLE QUARANTINE ZONE: For tree work to be performed within the quarantine zone, the Contractor shall utilize the service of a Sub/Contractor certified by the New York State Department of Agriculture and Markets. Due to current Federal, State and NYC DPR policy, any wood waste that is generated must be completely chipped within the Quarantine Zone, by said certified Sub/Contractor. Log splitting equipment, where necessary, shall be utilized at no extra cost to the City. See General Conditions, Special Provisions, Section C, Article 14 "Tree Work". For additional information regarding procedures, the Contractor shall notify the Arboriculture and Horticulture office by email at Capital.Arb-Hort@parks.nyc.gov a minimum of 48 hours in advance of any work. Also, see requirements listed under heading "Submittals".

METHOD: Stumps and roots shall be excavated to a depth of three (3) feet. All voids and excavations left after the removal of the stump and roots shall be backfilled to grade with clean earth fill. The fill shall be placed and compacted by acceptable methods to the satisfaction of the Engineer. Chips generated by stump removal operations shall be removed prior to backfilling.

If, when removing the stumps, existing walks or curbs are disturbed, the Contractor shall restore and/or reset these walks and curbs, at no additional cost, to the satisfaction of the Engineer. The Contractor is responsible for locating and protecting underground utilities from damage during excavation and/or grinding of stumps.

PAYMENT SCHEDULE: The Contractor will be paid at the following rates for the different size groups of stumps removed based on the unit bid price for removing a stump over 6" to 12" in diameter (base unit).

STUMP DIAMETER	STUMP UNITS	PAYMENT PER STUMP REMOVED
Over 6" to 12"	1.0(base unit)	100% of Unit Bid Price
Over 12" to 18"	1.25	125% " " "
Over 18" to 24"	1.50	150% " " "
Over 24" to 30"	2.0	200% " " "
Over 30" to 36"	2.25	225% " " "
Over 36" to 42"	2.5	250% " " "
Over 42" to 48"	3.5	350% " " "
Over 48"	4.0	400% " " "

ARBITRARY EXAMPLE: For example, removal of one (1) 16" diameter stump would receive payment for 1.25 stump units, removal of one (1) 36" diameter stump would receive payment for 2.25 stump units and one (1) 26" diameter stump would receive payment for 2.0 stump units for a total of 5.50 stump units.

The stump diameter shall be measured in the presence of the Resident Engineer or an A&H representative.

SUBMITTALS: All submittals shall be as specified in Section C, Special Provisions, Article 11. The Sub/Contractor shall submit the following for review and approval prior to performing work.

Qualifications In Quarantine Zone: State Certification-For all contracts within the Quarantine Zone, the Sub/Contractor must submit a copy of a valid Compliance Agreement issued by the State of New York Department of Agriculture and Markets, Division of Plant Industry.

MEASUREMENT AND PAYMENT: The quantity of stump removal to be paid for under this item shall be the number of stump units calculated in accordance with the above payment schedule, completely removed in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price for **EACH** stump of the over 6" to 12" diameter size group removed and shall include the cost of all labor, materials and equipment necessary for removing stumps, including disposal of any generated material and required fees for disposal, borrowed fill, restoration of walks and curbs disturbed by this operation, maintenance and repair of utilities and all other incidentals necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

The cost of State Certification and chipping wood waste shall be included in the bid price for all Contracts located within the Quarantine zone.

NOTE:
All stumps 6" diameter and less shall be removed under the item "Clear and Grub".

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rev. 8/21/2012

ITEM NO. 11 TREE REMOVAL OVER 6" TO 12" DBH

WORK: Under this item, the Contractor shall cut and remove within the contract limits, all trees over six (6) inches DBH, including the root to a depth of three (3) feet below the surface, where shown on the plans or as directed by the Engineer.

Note: DBH is defined as Diameter at Breast Height, which is 4'-6" above grade.

SPECIAL REQUIREMENTS FOR LONGHORNED BEETLE QUARANTINE ZONE: For tree work to be performed within the quarantine zone, the Contractor shall utilize the service of a Sub/Contractor certified by the New York State Department of Agriculture and Markets. Due to current Federal, State and NYC DPR policy, any wood waste that is generated must be completely chipped within the Quarantine Zone, by said certified Sub/Contractor. Log splitting equipment, where necessary, shall be utilized at no extra cost to the City. See General Conditions, Special Provisions, Section C, Article 14 "Tree Work". For additional information regarding procedures, contact Landscape Construction at (718) 760-6736. Also, see requirements listed under heading "Submittals".

METHOD: The Contractor shall carefully protect against damage all existing trees, plants and other features to remain. He shall be liable for any damage to such trees, plants, park features and other property caused by Tree Removal operations and all damaged property shall be replaced or restored to its original condition to the satisfaction of the Engineer.

The Contractor shall cut and remove all trees designated for removal within the limits of the contract or as directed by the Engineer. The stumps and roots of these trees shall be removed to a depth of three (3) feet below the ground surface except in areas of fill greater than three (3) feet, where such trees may be cut flush with the ground surface. All voids and excavations left after removal of the tree and roots shall be backfilled to grade with clean earth fill. The fill shall be placed and compacted by acceptable methods to the satisfaction of the Engineer. Chips generated by root removal operations shall be removed prior to backfilling.

Cutting of trees shall be done by competent workmen only and in workmanlike manner. All trees shall be "topped" and "limbed" previous to felling unless otherwise directed by the Engineer. All branches, limbs, trunks, stumps, roots and other debris shall be removed from the site or otherwise disposed of to the satisfaction of the Engineer.

No trees are to be removed except as ordered by the Engineer.

PAYMENT SCHEDULE: The Contractor will be paid at the following rates for the different size groups of trees removed, based on the unit bid price for removing a tree over 6" to 12" DBH (base unit).

TREE DBH	TREE UNITS	PAYMENT PER TREE REMOVED
Over 6" to 12"	1.0 (base unit)	100% of unit bid price
Over 12" to 18"	1.25	125% "
Over 18" to 24"	1.5	150% "
Over 24" to 30"	2.0	200% "

Over 30" to 36"	2.5	250%	"
Over 36" to 42"	3.5	350%	"
Over 42" to 48"	4.5	450%	"
Over 48"	5.5	550%	"

Arbitrary Example: For example, removal of (1) 30" DBH tree would receive payment for 2.0 tree units, removal of (1) 22" DBH tree would receive payment for 1.5 tree units, and removal of (1) 7" DBH tree would receive payment for 1.0 tree unit, for a total payment of 4.5 tree units.

The tree DBH shall be measured in the presence of the Resident Engineer or the Landscape Supervisor, Matthew DiVittorio at (718)760-6736.

SUBMITTALS: All submittals shall be as specified in Section C, Special Provisions, Article 11. The Sub/Contractor shall submit the following for review and approval prior to performing work.

Qualifications In Quarantine Zone:
State Certification- For all contracts within the Quarantine Zone, the Sub/Contractor must submit a copy of a valid Compliance Agreement issued by the State of New York Department of Agriculture and Markets, Division of Plant Industry.

MEASUREMENT AND PAYMENT: The quantity of Tree Removal to be paid for under this item shall be the number of tree units calculated in accordance with the payment schedule above, completely removed in accordance with the plans and specifications and directions of the Engineer.

The price bid shall be a unit price for **EACH** tree of the over 6" to 12" DBH size group, and shall include the cost of all labor, materials and equipment necessary for removing and disposing trees, including removal of root to 3' depth, borrowed fill, and all other incidentals necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer. The cost of State Certification and chipping wood waste shall be included in the bid price for all Contracts located within the Quarantine zone.

Trees six (6") in DBH and under shall be removed and paid for under the item "Clear and Grub"

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ITEM NO. 12 REMOVE STEEL BAR REINFORCED CONCRETE

WORK: Under this item, the Contractor shall demolish and remove steel bar reinforced concrete pavements, foundation walls and slabs, and other materials which require hoe ram or other heavy concrete breaking equipment for the performance of the work.

All curbs, (including curbs containing steel reinforcement, except Type 8 and larger), unit masonry foundations such as brick and concrete block, and all other materials which can be removed with equipment performing normal excavation operations, shall be excluded from this item. Removal of concrete pavement reinforced with welded wire mesh or other concrete removal that does not require special equipment are also excluded. This work shall be paid for under the item "Unclassified Excavation".

EXECUTION: The Contractor shall verify all dimensions and conditions in the field and shall be responsible for same. The Contractor shall demolish and remove reinforced concrete and foundations as indicated on the plans and as directed by the Engineer.

Foundation walls shall be demolished and removed to a depth of four feet (4'-0") below proposed elevations. No payment will be made for the removal of any foundation material which, for the convenience of the Contractor, exceeds the depth of four feet (4'-0") below proposed finished grade.

DISPOSAL: All material shall become the property of the Contractor and shall be removed from the site at no additional cost to the City.

UTILITIES: Should the Contractor encounter any utilities or services during the performance of the work, he shall notify the City Department or Utility Company owning or controlling such services for appropriate cutoff or repairs. Any service cutoff or interruption by the Contractor shall be restored at the Contractor's expense.

MEASUREMENT AND PAYMENT: The quantity of steel bar reinforced concrete removal to be paid for under this item shall be the number of **CUBIC YARDS** of material, measured in its original position, excavated and disposed of, as directed by the Engineer.

The price bid shall be a unit price per **CUBIC YARD** and shall include the cost of all labor, material and equipment, including sawcutting, and burning steel rebars, necessary to complete the work in accordance with the plans, specification and to the satisfaction of the Engineer.

Removal of DPR standard type eight (8) curb and larger may be paid for under this item. Removal of all other reinforced curbs and concrete reinforced with welded wire mesh shall be paid for under the item "Unclassified Excavation".

END OF PAGE

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rev. 3/3/2005

ITEM NO. 13 REMOVE AND DISPOSE CONCRETE AND ASPHALT DEBRIS

WORK: Under this item the Contractor shall remove and dispose concrete and asphalt debris that has been displaced and is located within the contract area, as directed by the Engineer.

DEFINITION: Concrete and Asphalt Debris shall be consider material that is displaced and is not in its original locations and can be collected and loaded and will not require hoe ram type heavy concrete breaking equipment.

DISPOSAL: All asphalt and concrete material must be legally disposed of at the Contractor's expense. All excess material shall be removed in compliance with NYSDEC regulations. A disposal plan shall be submitted (see SUBMITTALS:)

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

MATERIAL DISPOSAL PLAN: The Contractor shall submit a disposal plan that documents that material will be disposed in accordance with City, State and Federal laws to the Engineer ten (10) days prior to commencing trucking operations for the Engineer's approval. The plan shall list any and all solid waste management facilities the Contractor intends to utilize. The acceptance of a disposal plan by the Engineer shall not relieve the Contractor of their responsibility to dispose of excess material legally.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE AND DISPOSE CONCRETE AND ASPHALT DEBRIS** to be paid for under this item shall be the number of **CUBIC YARDS** of material, measured in its original position or by the truck measure after loaded.

The price bid for unclassified excavation shall be a unit price per **CUBIC YARD** and shall include the cost of all labor, materials, equipment and incidental expenses necessary for the loading and disposal of material, disposal plan, and other incidental work and expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

Removal of Steel Bar Reinforced Concrete shall be paid for under its own Item.

Unclassified Excavation, where deemed necessary, shall be paid for separately under its own Item.

END OF PAGE

NonStd. 12/11/12 (DPR)

ITEM NO. 14 REMOVE AND DISPOSE DEBRIS

WORK: Under this item the Contractor shall remove and dispose debris that is located within the contract area, as directed by the Engineer.

DEFINITION: Debris shall be consider material that is located within the Contract site and shall include, but not limited to, deleterious substances, organic matter, wood, plastic, cardboard, paper, metal objects, gypsum board, rubble, loose sewer pipes, brush, appliances, furniture, docks, piles of piers, crushed or pulverized construction material debris, etc. that cannot be disposed at a material recycling facility (Concrete and Asphalt Debris). Debris shall also include concrete and concrete products, asphalt pavement and brick that is mixed with other material if determined by the Engineer cannot be separated. All material deemed to be salvageable by DPR shall be stockpiled as directed by the Engineer.

DISPOSAL: The material shall be loaded into trucks or containers for disposal. The material shall be reduced to the minimum size practical using a backhoe or similar equipment to break and compact material. The engineer shall determine the quantity of material by measure of the truck or container used for disposal and the acceptability of the Contractor effort to break and compact material.

All debris material must be legally disposed of at the Contractor's expense. All material shall be removed in compliance with NYSDEC regulations. A disposal plan shall be submitted (see SUBMITTALS:)

UTILITIES: Should the Contractor encounter any utilities or services during the performance of the work, he shall notify the City Department or Utility company owning or controlling services to cut off these services.

Any services cut off or interrupted by the Contractor's operations shall be restored at the Contractor's expense.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

MATERIAL DISPOSAL PLAN: The Contractor shall submit a disposal plan that documents that material will be disposed in accordance with City, State and Federal laws to the Engineer ten (10) days prior to commencing trucking operations for the Engineer's approval. The Contractor shall be responsible for all sample collection and laboratory analyses of debris material required by the disposal facility. The plan shall list any and all solid waste management facilities the Contractor intends to utilize. The acceptance of a disposal plan by the Engineer shall not relieve the Contractor of their responsibility to dispose of excess material legally.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE AND DISPOSE DEBRIS** to be paid for under this item shall be the number of **CUBIC YARDS** of material, measured by truck or

container measure after loaded. The Engineer shall determine the quantity of partial trucks or containers and shall determine that the m

The price bid for unclassified excavation shall be a unit price per **CUBIC YARD** and shall include the cost of all labor, materials, equipment and incidental expenses necessary for the loading and disposal of material, disposal plan, sample collection and laboratory analyses of material required by the disposal facility and other incidental work and expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

Remove and Dispose Concrete and Asphalt Debris, shall be paid for under its own item.

Removal of Steel Bar Reinforced Concrete shall be paid for under its own items.

Unclassified Excavation, where deemed necessary, shall be paid for separately under its own Item.

END OF PAGE

NonStd Rev. 12/04/12 (DPR)

ITEM NO. 15 REMOVE BLOCK AND/OR STONE PAVEMENT

WORK: Under this item the Contractor shall remove all flagstone, concrete, hexagonal, and/or granite block pavement set in a sand bed or mortared in a sand/cement grout, all in accordance with the plans, specifications and directions of the Engineer.

DESCRIPTION: It is the intent of this item to remove flagstone, concrete, hexagonal, and/or granite block pavement in areas where existing pavement will not be replaced.

DISPOSAL: All materials deemed salvageable shall become Parks property and shall be delivered to a city storage yard specified, or ordered by the Engineer. The Contractor shall notify the Foreman of Mechanics three (3) days in advance of such delivery. All other material shall become the property of the Contractor and properly disposed of.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE BLOCK AND/OR STONE PAVEMENT** to be paid under this item shall be the number of **square yards** of flagstone, concrete, hexagonal, and/or granite block pavement entirely removed and salvaged in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **SQUARE YARD** of flagstone, concrete, hexagonal, and/or granite block pavement removed and salvaged and shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

END OF PAGE

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rev. 12/19/05

ITEM NO. 16 REMOVE CHAIN LINK FENCE

WORK: Under this item the Contractor shall completely remove fencing of all sizes in accordance with the plans, specifications and directions of the Engineer.

DESCRIPTION: It is the intent of this item to remove entire chain link fences in areas where fences are not being replaced or in areas where new fences are to be constructed utilizing post holes in existing curbs or piers.

METHOD: Where new fences are not to be constructed and curbs are to remain, cut posts flush with either the existing pier or concrete curb, and neatly fill post holes with a mixture of one (1) part cement and three (3) parts sand. Grout shall be neatly finished off to match the existing surface. Piers which will not be reused shall be removed. Removal of piers shall be paid for under a separate item. Where post holes are to be reused for the construction of new chain link fence, the holes are to remain open and ungrouted.

DISPOSAL: All materials deemed salvageable shall become the property of DPR and shall be delivered to a city storage yard specified, or ordered by the Engineer. The Contractor shall notify the Foreman of Mechanics three (3) days in advance of such delivery. All other material shall become the property of the Contractor and properly disposed of .

MEASUREMENT AND PAYMENT: The quantity of **REMOVE CHAIN LINK FENCE** is to be paid under this item shall be the number of **square feet** of chain link fence entirely removed in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **SQUARE FOOT** of fence removed, and shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the work, including cement and sand mixture, all in accordance with the plans and specifications to the satisfaction of the Engineer.

Removal of concrete piers and curbs shall be paid for under the items "Unclassified Excavation" and "Remove Concrete Curb", respectively.

END OF PAGE

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rev. 12/10/97

ITEM NO. 17 REMOVE GATE LEAF

WORK: Under this item the Contractor shall remove the existing gate leaves and gate hardware in accordance with the plans, specifications and directions of the Engineer.

DISPOSAL: All materials deemed salvageable shall become Parks property and shall be delivered to a city storage yard specified, or ordered by the Engineer. The Contractor shall notify the Foreman of Mechanics three (3) days in advance of such delivery. All other material shall become the property of the Contractor and properly disposed of.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE GATE LEAF** to be paid for under these items shall be the number of gate leaves and attendant hardware removed in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price for **EACH** gate leaf removed including hinges and shall include the cost of all labor, materials, equipment and incidentals expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

END OF PAGE

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rev. 8/10/98

ITEM NO. 18 **REMOVE STEEL GUARD RAIL**

WORK: Under this item, the Contractor shall remove and dispose of the damaged steel guard rail in accordance with the drawings, specifications, and under the directions of the Engineer.

DESCRIPTION: The intent of this item is to remove and dispose of the guard rails and posts that were damaged during the storm event.

EXECUTION: Contractor shall verify extents of guard rail removal prior to work. Guard rail sections that have not been damaged may be salvaged and set aside for future use under direction of the Owner. Guard rail posts must be removed in their entirety. Voids that remain from removing posts must be backfilled. Sand can be used as an approved backfill for guard rail posts.

DISPOSAL: The subsequent disposal of the guard rail, post, and foundation shall be included and paid for under "REMOVAL OF DEBRIS".

MEASUREMENT AND PAYMENT: The quantity of **REMOVE DAMAGED STEEL GUARD RAIL** to be paid for under this Item shall the number of **LINEAR FEET** of guard rail length removed in accordance with the plans and specifications, to the satisfaction of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of guard rail removed and shall include the cost of all labor, materials, and equipment necessary to complete the work, including any incidental expenses, in accordance with the plans and specifications, to the satisfaction of and per the directions of the Engineer.

Removal of concrete piers shall be paid for under "UNCLASSIFIED EXCAVATION".

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NonStd. 12/18/12

ITEM NO. 19 **REMOVE CONCRETE CURB**

WORK: Under this item the Contractor shall saw-cut and completely remove and dispose of existing damaged concrete curbs and curb footings, all in accordance with the plans, specifications and directions of the Engineer.

The Contractor shall perform this work with all due care, taking precautions to protect the adjacent pavements and structures, and shall be responsible for any damages he may cause to them during the performance of his operations.

The payment lines for the removal of the existing concrete curbs shall be neat lines.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE CONCRETE CURB** to be paid for under this item shall be the number of **CUBIC YARDS** of concrete curb removed and disposed of in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **CUBIC YARD** of concrete curb removed and shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the work, including saw-cutting, excavation, and disposal, all in accordance with the plans and specification to the satisfaction of the Engineer.

END OF PAGE

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rev. 8/10/98

ITEM No. 20 DEMOLITION & REMOVAL OF BOARDWALK RAMPS

WORK: Under this item the Contractor shall demolish and remove the existing damaged sections of Boardwalk (including ramps and stairs) including decking, lumber and timber, light posts, wiring and conduit, water fountains, water piping, railings and all accessories which are part of the damaged boardwalk in accordance with the specifications and directions of the Engineer.

The DEMOLITION & REMOVAL OF BOARDWALK RAMPS (DECKING, LUMBER, TIMBER RAILING & ACCESSORIES) shall include removal of all the decking, timber & lumber (stringers) light posts, wiring and conduit, water fountains, water piping, railings and all accessories for the removal of damaged boardwalk ramps and stairs. The removal of the beach sand which might exist on the boardwalk refer to the "Removal of Sand" item. The Contractor shall remove the sand and dispose of the sand as detailed below or relocate it as directed by DPR. After removal of the boardwalk, the Contractor shall in-fill sand or soil in excavated areas as directed by the Engineer.

The Contractor shall remove all debris (decking, stringers, railings and etc.) from the premises and properly and legally dispose of all materials off the site. All removed materials become property of the Contractor. There shall be no burning of any materials on site. The Contractor shall submit documentation indicating the Chain of Custody to disposal to prove proper disposal.

The Contractor shall exercise extreme care to protect adjacent existing structures and shall be responsible for any damage he may cause to the structures during construction and his operations.

UTILITIES: For Utilities or Services encountered by Contractor during the performance of the work, the Contractor shall notify the DPR and the utility company owning or contracting the services. The services shall be cut off and relocated by the owner of the utility or services. The Contractor is responsible for all filings, fees and relocation and re-installation costs related to the restoration of these services.

All utilities or services requiring removal by the Contractor, (including, but not limited to) light poles, drinking fountains, alarm boxes, telephone posts, etc) shall be removed and disposed by the Contractor at no additional cost to the City, and such work shall be deemed to be included in the square foot unit cost of this item. The agency having jurisdiction over the specific utility shall be notified prior to commencement of the work.

SALVAGEABLE MATERIALS: All materials deemed salvageable by DPR Design or Field Engineer, shall become the property of DPR and shall be delivered to a city storage yard as specified, or as ordered by the Engineer. The Contractor shall notify the Foreman of Mechanics three (3) days in advance of such delivery.

MEASUREMENT & PAYMENT: The quantity of **DEMOLITION AND REMOVAL OF BOARDWALK RAMPS (DECKING, LUMBER, TIMBER, RAILING & ACCESSORIES)** to be paid for under this item, shall be the number of **EACH** boardwalk ramp (including railing, timber and lumber removal), measured in place in accordance with the plans, sketches and/or specifications and to the directions of the Engineer.

The price bid shall be a unit price for **EACH** and shall include the cost of all labor, materials and equipment necessary to demolish and remove the existing boardwalk ramps, including decking, railing, timber and lumber, deck nails, deck screws, tar paper, light posts, wiring and conduit, water fountains, water piping, railings and all accessories, the salvaging of materials if required, the removal of utilities if required, for limit and other incidental expenses necessary to complete the work, all in accordance with the plans, sketches, and specifications to the satisfaction of the Engineer.

The removal of sand from boardwalks shall be paid for separately under sand removal items.

The removal of foundations for steps and ramps, where directed by the Engineer, shall be paid for under the Remove Steel Bar Reinforced Concrete or Unclassified Excavation Item as applicable.

Sand or soil placed, as directed by the Engineer, by the Contractor after removal of the boardwalk ramps shall be paid under the Sand Moving Operations items.

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ITEM No. 21 **RESET LOOSE/HEAVED WOODEN BOARDWALK PLANK**

WORK: Under this item the Contractor shall remove and reset existing wooden boardwalk planks or replace heavily deteriorated members with new wooden plank in accordance with plans, specifications and directions of the Engineer.

The Contractor shall remove all debris (decking, fasteners, and etc.) from the premises and properly and legally dispose of all materials off the site. All removed materials become property of the Contractor. There shall be no burning of any materials on site. The Contractor shall submit documentation indicating the Chain of Custody to disposal to prove proper disposal.

The Contractor shall exercise extreme care to protect adjacent existing structures and shall be responsible for any damage he may cause to the structures during construction and his operations.

UTILITIES: For Utilities or Services encountered by Contractor during the performance of the work, the Contractor shall notify the DPR and the utility company owning or contracting the services. The services shall be cut off and relocated by the Contractor. The Contractor is responsible for all filings, fees and relocation and re-installation costs related to the restoration of these services.

All utilities or services requiring removal by the Contractor, (including, but not limited to) light poles, drinking fountains, alarm boxes, telephone posts, etc) shall be removed and disposed by the Contractor at no additional cost to the City, and such work shall be deemed to be included in the square foot unit cost of this item. The agency having jurisdiction over the specific utility shall be notified prior to commencement of the work.

SALVAGEABLE MATERIALS: All materials deemed salvageable by DPR Design or Field Engineer, shall become the property of DPR and shall be delivered to a city storage yard as specified, or as ordered by the Engineer. The Contractor shall notify the Foreman of Mechanics three (3) days in advance of such delivery.

MEASUREMENT & PAYMENT: The quantity of RESET LOOSE/HEAVED WOODEN BOARDWALK PLANK to be paid for under this item shall be the number of **SQUARE FEET** of decking, measured in place in accordance with the plans, sketches and/or specifications and to the directions of the Engineer.

The price bid shall be a unit price per **SQUARE FOOT** and shall include the cost of all labor, materials and equipment necessary to reset existing and replace heavily damaged wooden boardwalk planks, including decking, timber and lumber, deck nails, deck screws, tar paper, and all accessories, the salvaging of materials if required, the removal of utilities if required, for limit and other incidental expenses necessary to complete the work, all in accordance with the plans, sketches, and specifications to the satisfaction of the Engineer.

END OF PAGE

ITEM NO. 22 **SAW CUT PAVEMENT**
ITEM NO. 23 **SAW CUT CURBS AND WALLS**

WORK: Under these items, the Contractor shall saw cut existing pavements and/or saw cut existing curbs and walls in accordance with the plans, specification and direction of the Engineer.

EXECUTION: All work shall be done by competent mechanics in an approved manner to the satisfaction of the Engineer.

All saw cutting shall be carried out to the full depth of the pavement, curb or wall to be cut. Saw cutting shall be done to accurate, neat and straight lines marked previously to commencement of work. Saw cutting shall be done with approved power saws specifically designed and manufactured for such a purpose.

Workmen shall wear safety clothing and eye protection while operating saw equipment and shall be thoroughly familiar in the safe operation of the equipment.

MEASUREMENT AND PAYMENT: The quantity of **SAW CUT PAVEMENT** and **SAW CUT CURBS AND WALLS** to be paid for under these items shall be the number of **LINEAR FEET** of saw cutting performed, in accordance with the plans, specifications and directions of the Engineer. Measurement of curbs and walls shall be either horizontal or vertical, whichever quantity is greater.

The price bid shall be a unit price per **LINEAR FOOT** and shall include the cost of all labor, materials, equipment and incidentals necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

END OF PAGE

6/4/98

ITEM NO. 24 HAND AND/OR PNEUMATIC EXCAVATION

WORK: Under this Item, the Contractor shall perform **HAND AND/OR PNEUMATIC EXCAVATION** in accordance with the plans, specifications, and directions of the Engineer.

INTENT: The intent of the item is to either hand excavate or excavate with a pneumatic air device in areas where trenching or other excavation is required within the drip line of existing trees and/or excavation around gas lines and other sensitive areas. These are areas, where in the opinion of the Engineer, use of a backhoe or tractor would not be appropriate.

METHOD: Prior to beginning work, the area to be trenched/excavated shall be thoroughly wetted, 24 hours in advance, to minimize dust to the greatest extent possible. Trenching/Excavation shall be accomplished either by hand or with a pneumatic device such as an Air-Spade® CGP System, as manufactured by Concept Engineering Group, Inc. Verona, PA, or approved equal. The Contractor shall provide a compressor unit for operating the pneumatic excavator rated at one hundred fifty standard cubic feet per minute (150 scfm) at ninety pounds per square foot gauge (90 psfg). All pneumatic excavation shall be as minimal as possible in width and depth, thereby minimizing the impact on tree roots and other areas where the Engineer determines that conventional machine excavation may be detrimental. Different nozzles may be used on the air spade to expedite the work or minimize the amount of airborne material. Depth shall be as indicated on Contract Drawings or as directed by the Engineer. Depths greater than 18" shall require removal of soil by hand shovel, or other appropriate means. Where a pneumatic device is used, care shall be taken to avoid rocks being scattered and inadvertantly damaging private or public property. In addition, operators must be equipped with adequate protective clothing and gear, in accordance with manufacturers recommendations. All tree roots exposed by the pneumatic or hand excavation operation must be kept constantly moist with burlap covered with white plastic and checked a minimum of two (2) times a day, once in the morning and once in the afternoon, for a maximum of forty-eight (48) hours, until backfill is complete as directed by the Director of Arboriculture and Horticulture, or his designated representative. If directed, soaker hoses shall be installed to facilitate properly moist conditions.

Necessary inspections of piping shall be scheduled in advance, especially those involving inspections performed by outside Agencies.

In cases where roots must be cut, the Contractor must receive written approval from the Director of Arboriculture and Horticulture or his designated representative prior to cutting any roots larger than one inch (1") in diameter. Roots must be cut cleanly with pruning shears, loppers, or pruning saws. All root cuts must be approved by the Engineer prior to backfilling. (See Article 14).

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

The Contractor shall submit in advance the proposed method of excavation performed under this item. If a device other than the Air-Spade®is proposed, all product literature shall be submitted for review.

MEASUREMENT AND PAYMENT: The quantity of **HAND AND/OR PNEUMATIC EXCAVATION** to be paid for under this Item shall be the number of **CUBIC YARDS** of material excavated and backfilled, as measured in its original position, in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **CUBIC YARD** of Hand And/Or Pneumatic Excavation and shall include the cost of all labor, materials, and equipment necessary, including compressor and backfilling, in accordance with the plans and specifications, to the satisfaction of the Engineer.

Note: Any overruns of quantity on this item shall be identified and approved prior to use, in writing, by the Engineer.

END OF PAGE

Rev. 01/26/2012

ITEM NO. 25 UNCLASSIFIED EXCAVATION

WORK: Under this item the Contractor shall do all excavating, not included under other items, required for grading, trenching, paving, curbs, construction and reconstruction of structures, such as buildings, subsurface structures or any other structures; and shall place, compact and dispose of excavated materials in accordance with the plans, specifications and directions of the Engineer.

DEFINITION: Excavation shall be defined as the removal of fence footings, pavements (including concrete pavement reinforced with welded wire mesh), all curbs (except DPR standard type eight (8) and larger), earth, boulders, buried timbers, broken concrete pieces, unit masonry foundations e.g. concrete block, brick and other materials of any nature whatsoever encountered that will not require special rock or hoe ram type heavy concrete breaking equipment. Where directed, excavation within the tree protection zone shall be performed with equipment of lighter weight to avoid compaction, as approved by the Director of Arboriculture and Horticulture or his Representative.

EXCAVATION AND FILLING: The entire area of work shall be brought to the required lines and grades by excavation and filling. Excavation materials suitable in the opinion of the Engineer, shall be used in making embankments and filling the low areas of the work, and at such places as the Engineer may direct.

PROTECTION OF EXISTING TREES AND SHRUBS: All tree and shrub roots exposed by excavating operations must be kept constantly moist with burlap covered with white plastic and checked a minimum of two (2) times a day, once in the morning and once in the afternoon, for a maximum of forty-eight (48) hours, until backfill is complete as directed by the Director of Arboriculture and Horticulture, or his designated representative. If directed, soaker hoses shall be installed to facilitate properly moist conditions. No roots greater than 1" shall be cut without written permission of the Director of Arboriculture and Horticulture or his designated representative. In certain areas the Contractor shall use the Standard Specification "Hand and/or Pneumatic Excavation, in accordance with the Contract Drawings and directions of the Engineer. Also see Section C, Article 14, „Tree Work" for additional information and requirements.

SUBGRADE: All soft, boggy, clayey or other objectionable material below the proposed subgrade shall be removed, and the area refilled with acceptable material.

SOD: Sod removed from excavation shall be disposed of to the satisfaction of the Engineer, but shall not be used in construction of embankment.

BOULDERS: The Contractor shall remove all boulders, stone or pieces of concrete, lumber, iron or other material that project above subgrade. Any stone larger than two (2) cubic feet in volume shall not be placed within two (2) feet of the finished surface.

DRAINAGE STRUCTURES: Existing catch basins, drop inlets, manholes and similar structures to be abandoned shall be broken down and excavated to a depth of four (4) feet below the finished surface, and the void backfilled with suitable material. All drainage lines and sewer lines designated

to be abandoned or plugged under this contract, shall be plugged at both ends with average concrete twelve (12") inches into the pipe.

EMBANKMENT, COMPACTING: Embankment shall be carried on as directed by the Engineer, and shall be constructed in successive horizontal layers not over six (6") inches in depth, extending across the entire fill. It shall be spread by a "Bulldozer", or other acceptable methods, and each six inch layer shall be thoroughly compacted by rolling with a self-propelling roller weighing not less than ten (10) tons and completed to the satisfaction of the Engineer. In places where the character of the material makes the use of this roller impractical or where drains or other construction may be damaged, a lighter one may be substituted, or the area shall be compacted by tamping, all with the approval, and to the satisfaction of the Engineer.

On sidehill fills or where the nature of the materials make layer rolling impractical the Contractor shall use other means, satisfactory to the Engineer, of depositing and compacting the material. In order that fills and embankments may be allowed natural settlement to as great an extent as possible, all structures below the surface shall be constructed and backfilled as long as possible before the construction of any other work.

All hollows and depressions which develop during the process of rolling and compacting shall be filled with acceptable material, and the subgrade shall again be compacted. This process of filling and compacting shall be repeated until no depressions develop.

Care shall be taken not to roll clay foundations enough to develop a plastic condition. Where required in the opinion of the Engineer, areas shall be compacted and settled by puddling with water.

EXCAVATING FOR FOUNDATIONS: All excavations shall be cut accurately to required lines and dimensions for work on drawings and shall be large enough to provide adequate clearance for the proper execution of the work within them.

BOTTOMS OF EXCAVATIONS: The Contractor shall level the bottoms of all excavations accurately to the lines and levels shown on the plans or as directed by the Engineer to receive the bottoms of footings or other work supported on soil.

Where excavation for a foundation has been carried below the indicated level by error on the part of the Contractor, he will be required to fill the space between the incorrect and required depth with average concrete at no additional cost to the City.

STORAGE AND PLACEMENT: All those excavated materials which in the opinion of the Engineer are suitable for backfilling shall be stored or placed within the limits of the Contract, where directed by the Engineer. Refer to Article 14, Section C, for requirements to eliminate surface and subsurface root damage and soil compaction.

SURPLUS: Excess material excavated must be legally disposed of at the Contractor's expense. All excess material shall be removed in compliance with NYSDEC regulations. Where quantities of

surplus material exceed twenty (20) cubic yards, or as directed by the Engineer, a disposal plan shall be submitted (see SUBMITTALS:)

SHORING: Wherever necessary to maintain the banks of excavation in a safe and stable condition, the Contractor shall furnish and install temporary sheet piling or planks, braces and shores of good sound timber of adequate strength, and shall remove such piling or shoring as the foundation work progresses.

All shoring work shall meet or exceed the requirements of the New York State Department of Labor Industrial Code Rule 23 and Title 29 Code of Federal Regulations Part 1926, Safety and Health Regulations for Construction.

Where the depth of excavation exceeds five (5) feet, sheeting and necessary bracing must be installed for the entire depth below the existing ground surface.

The type of sheeting and bracing shall be satisfactory to the Engineer and subject to his approval, but the approval by the Engineer of a method to be used does not relieve the Contractor of his responsibility for protection and safety.

The foregoing shall include the construction and removal of sheeting and bracing, the excavation and maintenance of temporary ditches, and the furnishing and operation of pumps or other appliances needed to properly drain the work. No additional payment will be made for this work, but payment therefore shall be deemed included in the cost of this item.

Separate payment shall be made for temporary sheeting only where the depth of excavation exceeds five (5) feet. When sheeting is used in trenches or excavations for structures of five (5) feet or less in depth, the cost of such sheeting and bracing, unless ordered left in place, shall be deemed included in the cost of this item.

INSPECTION: When the excavations have been carried to the required depth as shown on the drawings, the Contractor shall do no more work until after inspection by the Engineer, who shall order the foundation or other work to proceed, or further excavation, as the conditions indicate. No foundation or other work shall be done until the excavations therefore have been approved by the Engineer.

BACKFILL: After inspection and approval of masonry foundations and other work which is to be covered by backfill, the excavated voids around masonry and other work shall be filled with clean excavated material, puddled and rammed solid every six inches 6" of depth.

No direct payment shall be made for rehandling of excavated materials for backfilling structures, nor for any other purposes necessary to complete the work as shown on the plans, but the compensation will be considered as having been included in the price bid for excavation. Rehandling of excavated materials may be paid for as excavation when the same is made necessary by changes of plans and is ordered in writing by the Engineer. Backfilling inside of sheeting shall be placed before sheeting is removed.

After areas and trenches have been excavated and structures constructed therein, the spaces around and above them shall be carefully backfilled with acceptable material. Backfill shall be placed on both sides of structures to approximately the same elevation at the same time. All backfill shall be thoroughly tamped and rammed in place in layers not over six (6) inches in depth, using rammers of a weight acceptable to the Engineer. If directed by the Engineer, the backfill shall be thoroughly saturated with water as it is placed.

Backfill adjacent to foundation walls shall be pneumatically compacted.

BAILING AND DRAINING: The Contractor shall furnish all materials, appliances and labor required to keep the site of the work free from water, ice and snow during construction.

UTILITIES AND SERVICES: It is the Contractor's responsibility to detect and protect existing utilities (to remain) from damage during construction. Prior to start of construction the Contractor is required to notify:

New York City/ Long Island One Call Center
36-35 Bell Blvd., Suite 202
Bayside, New York 11361
(800) 272-4480

when excavation operations are to be conducted in the installation of any item of work that is deemed part of the original contract provisions or is specifically ordered by the Agency.

New York State General Business Law Article 36 and New York State Public Service Law Section 119-b, as set forth in Code Rule 753 mandates that the Contractor notify all underground facility operators in the area not less than two (2) and not more than ten (10) business days before the start of excavation to ensure that utility service lines are properly marked prior to excavation.

The Contractor's obligation to protect utilities is not relieved by calling the One Call Center. The Contractor shall understand that not all utilities will be identified by the One-Call Center and the Contractor is still responsible to locate these and other utilities, to the best of his ability, using electronic probes, or other methods, prior to the start of excavation. The Contractor shall then proceed cautiously and perform hand excavation, as necessary, to protect the utility as directed by the Engineer, at no extra cost to the City. If a utility is inadvertently damaged, it is the Contractor's responsibility to restore that utility to operating condition, equal to that existing prior to damage. The Contractor shall remain at the site with the damaged utility until it has been restored and there is no danger to the public (i.e. exposed live electrical wires, etc.).

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

Excess Material Disposal Plan: Where excess material is to be removed from the site, the Contractor shall submit a disposal plan that documents that material will be disposed in accordance with City, State and Federal laws to the Engineer ten (10) days prior to commencing trucking operations for the

Engineer's approval. The plan shall list any and all solid waste management facilities the Contractor intends to utilize. The acceptance of a disposal plan by the Engineer shall not relieve the Contractor of their responsibility to dispose of excess material legally.

MEASUREMENT AND PAYMENT: The quantity of **UNCLASSIFIED EXCAVATION** to be paid for under this item shall be the number of **CUBIC YARDS** of material, measured in its original position, excavated and disposed of as directed by the Engineer.

The price bid for unclassified excavation shall be a unit price per **CUBIC YARD** and shall include the cost of all labor, materials, equipment and incidental expenses necessary for the excavation, disposal, delivery and placing of excavated material, pumping, sheeting and bracing, disposal plan, and other incidental work and expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

For computation of quantities of excavation, no deductions shall be made in the areas of any cross section for any pipe or similar obstruction unless the area of such obstruction is greater than one square foot. Unless otherwise specified, **all Excavation payment lines shall be produced from neat lines except as follows:** Payment lines for pipes, drainage structures, building walls and Type 8 (eight) curbs (only) shall be as shown on Drainage Details - Number 2 of D.P.R. Standard Details.

Rock excavation, removal of steel bar reinforced concrete, and average concrete for plugging existing drain lines shall be paid for under their respective items.

Rock excavation includes only excavation of boulders of more than thirteen (13) cubic feet in volume and ledge rock which is determined by the Engineer to be so hard that it is necessary to loosen and handle with a power shovel, special rock breaking equipment or blasting.

Payment for temporary sheeting shall be paid for separately only when the depth of excavation exceeds five (5) feet or if the sheeting is less than five (5) feet and is ordered left in place.
Removal of all curbs (including those with steel reinforcement) shall be paid for under this item except DPR standard type eight (8) and larger), which may be paid for under Removal of Reinforced Concrete.

Hand and/or Pneumatic Excavation, where deemed necessary, shall be paid for separately under its own Item.

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ITEM NO. 26 BORROWED FILL (TRUCK MEASURED)

WORK: Under this Item, the Contractor shall furnish and place **BORROWED FILL (TRUCK MEASURE)** obtained from outside the site of the work, to bring the site to the required lines and grades indicated on the drawings and/or as directed by the Engineer.

MATERIALS: All fill material shall be from an approved source. The Contractor shall identify the source of the fill, and receive Agency approval prior to submitting the sample. See the "SUBMITTALS" heading of this Item. Brownfield and industrial sources will be rejected.

Acceptable particle size shall not be in excess of four (4") inches and no more than fifteen (15%) percent by weight passing the #200 mesh sieve. Material shall be a blend of all sizes within the acceptable range.

The fill material shall not smell of petroleum of give off other unnatural or toxic odors. Regardless of prior acceptance of sample material, should the fill material actually delivered to the site seem suspicious in any way, the Resident Engineer shall reject that material. Should the Contractor strongly disagree with the Resident Engineer's Determination, the Contractor may appeal. See the "APPEAL PROCESS" heading of this Item. Soil Composition shall be as follows for the two (2) types of use:

a) Clean Fill shall be placed as a subgrade material under Paved Areas and areas to receive bearing material under foundations. Clean Fill shall be defined as material free of pesticides, deleterious substances, organic matter, wood, plastic, cardboard, paper, metal objects, gypsum board, rubble and soil-like pulverized construction, and demolition debris. Acceptable Clean Fill materials shall be limited to uncontaminated concrete and concrete products, asphalt pavement, brick, glass, soil, and rock within the particle size limits listed above.

b) Horticultural Clean Fill shall be placed at planting areas. Horticultural Clean Fill shall be defined as material free of pesticides, deleterious substances, organic matter, wood, plastic, cardboard, paper, metal objects, gypsum board, rubble, crushed or pulverized construction and demolition debris, in addition to concrete and concrete products, asphalt pavement, brick, and glass. Only soil and rock shall be deemed acceptable for use as Horticultural Fill.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

Documented Fill Material Sample: Two (2) ten (10) pound bag Samples of each material to be used as fill shall be submitted to the Engineer ten (10) days prior to commencing fill operations for the Engineer's approval. By submitting samples of this material, the Contractor agrees and guarantees that the fill material used for construction will conform to the samples supplied. Final acceptance of fill material rests with the Engineer, whose decision shall be final and binding upon the Contractor. However, the acceptance of any material by the Engineer shall not relieve the Contractor of their

responsibility that the fill material used conforms with approved samples and the specifications. A sieve analysis and Notarized certificate identifying source of soil shall be secured to each sample submitted to NYCDPR. For Horticultural Fill, an additional pH test may be required, where directed by the Engineer. Test must indicate a pH not lower than 5.0 nor greater than 7.0.

Compaction Equipment: The Contractor shall supply data on the compaction equipment to the Engineer five (5) days prior to the intended use date for approval. The compaction equipment shall be able to compact fill material to ninety five percent (95%) maximum dry density at optimal moisture content, in accordance with ASTM D698 Standard Proctor Method (90% in areas to be planted).

Compaction Testing: Except in planted areas, the Contractor shall hire an approved independent testing laboratory to perform field and laboratory compaction tests of completed areas of fill if so directed by the Engineer. Field test shall be by the calibrated sand method; the laboratory test shall be as per ASTM D698 or AASHTO T99.

METHOD: Borrowed fill shall be placed in a manner that will produce a reasonably well graded mass. The material shall be constructed in successive horizontal layers not over six (6") inches in depth extending across the entire area of fill. Well graded material shall be so placed and distributed that there will be no pockets of single size solid material. Each layer shall be spread by a Bulldozer or other acceptable equipment and method and shall be thoroughly compacted by rolling with a self-propelled roller weighing not less than ten (10) tons, and shall be thoroughly and uniformly compacted to the satisfaction of the Engineer before the next successive layer is placed. In places where the character of the material makes the use of a roller impractical or where drains or other construction may be damaged, a lighter roller or manually guided compactor/vibratory plate type may be substituted to compact the fill to the satisfaction of the Engineer.

Hollows and depressions which develop during the process of rolling and compacting shall be filled with acceptable material and the subgrade recompacted. This process of filling and compacting shall be repeated until no depressions develop. The entire work of compacting shall be performed to the satisfaction of the Engineer.

Note: Care shall be taken not to excessively roll clay subgrade so as not to develop a plastic condition. Where required, in the opinion of the Engineer, areas shall be compacted and settled by puddling with water.

After compacting, the area shall be left in a uniformly compacted, smooth, dense, true, firm, satisfactory, and evenly finished condition, free of irregularities, voids, compaction planes, ridges, or loose material. Deficiencies resulting from improper placement or compaction shall be fully corrected by the Contractor. No additional compensation will be made for settlement.

APPEAL PROCESS: The Resident Engineer shall check for discoloration and evidence of unacceptable contents. If the Engineer suspects that the fill possesses hazardous or contaminated characteristics, it will be rejected. Should the Contractor contest the Engineer's determination, then samplings of the rejected soil will be sent to a Laboratory which is certified by the NYSDOH

Environmental Laboratory Accreditation Program (E.L.A.P.) for the selected analytical method.

Environmental Analysis shall include, but not be limited to, U.S.E.P.A. Standard Test Methods for determination of Contaminant Concentrations and the Toxicity Characteristic Leaching Procedure (T.C.L.P.) for determination of Leachability of at least 39 Components. The extraction portion of the T.C.L.P. Test shall be performed according to E.P.A.-SW846 Method 1311. Analysis of the extract shall be performed by E.P.A. Methods SW846; 8021 for Volatiles, 8270 for Semi-Volatiles and 6010 for Priority Pollutant Metals (P.P.L.), including lead. Other characteristic tests may include those for ignitability, corrosivity, and reactivity, as deemed required by the Resident Engineer.

These N.Y.S. D.E.C. Guidance Values are known as "CP-51 Soil Cleanup Guidance" (Revised 10/21/10), and consist of Table 1 "Supplemental Soil Cleanup Objectives". Final values shall be determined by either a health-based level, or a concentration necessary to protect ecological resources or groundwater quality, whichever is lower. If the soil fails, then the Contractor shall be responsible for:

1) Payment of fees for services of the N.Y. State certified lab,
2) Removal and legal disposal of Fill,
3) Replacement with acceptable fill and
4) All other expenses, as well as potential fines that may be incurred.

MEASUREMENT AND PAYMENT: The quantity of **BORROWED FILL** to be paid for under this Item shall be the number of **CUBIC YARDS**, measured by truck, furnished and placed in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit prices per **CUBIC YARD** and shall include the cost of all labor, materials, equipment, compaction, testing, and incidental expenses necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

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ITEM NO. 27 **REMOVE SAND FROM ARTIFICIAL TURF FIELD**

WORK: Under this item the Contractor remove and dispose sand accumulated on Artificial Turf Field located in]Midland Beach at Iona Street as directed by the Engineer. This shall include removal of sand and debris on the turf, flushing the underground system and disinfection of the remaining infill and turf system.

EXECUTION: The Contractor shall verify conditions in the field and shall be responsible for same. The Contractor provide all material, equipment, labor as required to remove the sand from artificial turf field turf. The sand shall be removed without damaging the existing turf field or related systems.

Debris mixed with sand on field, including, but not limited to, deleterious substances, organic matter, wood, plastic, cardboard, paper, is mixed with other material which cannot be readily separated shall be removed at no additional cost.

The contractor shall employ a two-step process for removal of sand. The first is to push the sand off the surface by mechanical means. The second step shall be use of a turf cleaning vacuum type system to remove the remaining sand. The Contractor should consider the weight of the machinery before starting work and while work is underway to ensure that the drainage system is not crushed and that the level of the field remains intact Street Sweepers with metal brushes will not be considered.

The contractor is to submit a plan for approval that is acceptable to the Engineer on the method of removal of the sand from the surface of the field.

The Contractor shall be responsible to provide emergency generators or power source for any mechanical equipment used.

DISPOSAL: All sand debris material must be legally disposed of at the Contractor's expense. All excess material shall be disposed in compliance with NYSDEC regulations. A disposal plan shall be submitted.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

MATERIAL DISPOSAL PLAN: The Contractor shall submit a disposal plan that documents that material will be disposed in accordance with City, State and Federal laws to the Engineer ten (10) days prior to commencing trucking operations for the Engineer's approval. The plan shall list any and all solid waste management facilities the Contractor intends to utilize. The acceptance of a disposal plan by the Engineer shall not relieve the Contractor of their responsibility to dispose of excess material legally.

MEASUREMENT AND PAYMENT: The **REMOVE AND DISPOSE SAND FROM ARTIFICAL TURF FIELD** to be paid for under this item shall be the LUMP SUM price for the removal and disposal of sand from the artificial turf field.

The price bid for remove and dispose sand from artificial turf field shall the **LUMP SUM** price and shall include the cost of all labor, materials, equipment and incidental expenses necessary for the removal, loading and disposal of material, disposal plan, and other incidental work and expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

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ITEM No. 28	**REMOVE AND STOCKPILE SAND**
ITEM No. 29	**REMOVE SAND**
ITEM No. 30	**MECHANICALLY CLEAN STOCKPILED SAND**
ITEM No. 31	**SAND MOVING OPERATIONS**
ITEM No. 32	**SAND MOVING OPERATIONS - MECHANICALLY CLEAN SAND**

WORK: Under these items, the Contractor shall remove, stockpile, mechanically clean and place sand using the following:

REMOVE AND STOCKPILE SAND as directed by the Engineer. This shall include all work for collecting, and transporting displaced sand from site, including ramps, stairs, pavement, parking lots and any adjacent areas, and stockpile on site.

REMOVE SAND as directed by the Engineer. This shall include all work for collecting and transporting sand from site, including ramps, stairs, pavement, parking lots and any adjacent areas. Sand to be removed has been deemed unsuitable for re-use and shall be disposed of offsite in an approved manner.

MECHANICALLY CLEAN STOCKPILED SAND as directed by the Engineer. This shall include all work for mechanically cleaning stockpiled sand at site locations. All sand shall be mechanically cleaned and re-stockpiled in same general location as directed by the Engineer.

SAND MOVING OPERATIONS as directed by the Engineer. This shall include all work for loading and transporting stockpiled sand and spreading and grading of the sand within the Contract site.

SAND MOVING OPERATIONS – MECHANICALLY CLEAN SAND as directed by the Engineer. This shall include all work for collecting and transporting displaced sand from site, including ramps, stairs, pavement, parking lots and any adjacent areas, stockpile on site and mechanically cleaning, spreading and grading of the sand within the Contract site.

The utilization of these items shall be at the unilateral discretion of the City.

EXISTING UTILITIES: Prior to the start of work, establish the location and extent of surface and underground utilities in the work area. Maintain, protect, relocate, or extend utility lines to remain which pass through the work area. Cap, plug, or seal abandoned lines, and identify termination points at grade level with markers. Any services cut off or interrupted by the Contractor's operations shall be restored at the Contractor's expense.

The Contractor shall identify outfall pipes in the work area prior to construction and promptly notify the Engineer in writing. Outfall pipes shall be marked and protected from damage during construction.

MATERIALS: Clean Beach Sand to be deposited on beach areas shall include reuse of storm- deposited sand and reworked piles of beach sand, as determined by the Engineer, that:

- does not contain storm debris or associated waste materials;
- does not exhibit evidence of petroleum, petroleum spills or gross contamination;
- does not exhibit chemical staining or odors indicative of contamination;
- does not exhibit evidence of sewage or fecal contamination.

Clean beach sand loading and placement will be subject to the following provisions:

- Clean beach sand placement areas will be above the astronomical high tide line and will not be subject to tidal action;
- Clean beach sand placement areas will be cleaned of storm-related debris prior to placement;
- Clean beach sand placement locations will be established and mapped as part of the placement operation;
- Any debris observed during loading or placement will be manually extracted and properly disposed;
- Beach sand relocated will be screened during loading, unloading or placement to verify that it is clean and contains no debris or contamination.

Mechanically clean sand and sand designated for beach placement to be free of rock (greater that two (2) inch size), rubble, trash, concrete, lumber, etc., plant material, frozen material and other objectionable material. The Contract shall submit to the Engineer for approval the method and equipments to be used for mechanically cleaning sand.

The Contractor shall remove and legally dispose of unauthorized materials, materials removed from sand and materials considered unsuitable by the Engineer.

SITE PREPARATION: Establish extent of grading operation by area and elevation to meet and continue existing grades to be directed by the Engineer.

The Contractor shall examine the work area for structures that could be susceptible to damage or which could have further damage caused by the Contractor's operations and promptly notify the Engineer in writing. Protect existing structures, plant material, surfaces, and other features designated to remain in accordance with Section C, Article 14.

Prior to placement of sand, the Contractor shall remove from the work area all rock, rubble, trash, debris, and other objectionable material lying within the beach fill area. The Contractor shall provide the Agency with unlimited access to beach placement area(s) including staging and access areas for the duration of the project. The Contractor shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise.

EXECUTION: The Clean beach sand shall be installed and spread on the beach to the required grades and at locations as directed by the Engineer. Clean beach sand will be relocated as directed by the Engineer and generally to the following locations:

- Between bare pile caps that formerly held the boardwalk where the boardwalk was destroyed.
- Underneath the boardwalk in areas where the boardwalk underlayment sand berm has been scoured and denuded;
- In areas within 10-50 feet of the boardwalk immediately south (on the beach side) and contiguous with the boardwalk underlayment sand berm to provide a stable grade down from boardwalk level to beach level;

Spread and grade sand using a bulldozer or approved equivalent method, to the satisfaction of the Engineer. Storm debris or associated material observed during grading operations shall be removed by hand and disposed as described below.

Provide uniform levels and slopes between new elevations and existing grades. Provide surface grades free from irregular changes. Grade surfaces to assure areas drain away from structures and to prevent ponding and pockets of surface runoff.

The means and methods for loading and transporting clean beach sand will be determined by the Contractor and approved by the Engineer, but are anticipated to utilize standard equipment within the industry, such as bull dozers, front end loaders and large capacity all-terrain trucks with dumping capability. The removal of sand shall also include use of had or small tools to remove sand under and adjacent to the boardwalk, ramps and stairs as directed by the Engineer. The Engineer will inspect the Contractor's Equipments to ensure that it is clean and free of debris or contamination.

The Contractor can temporarily close a section of beach anticipated for daily placement operations based on anticipated production rates. The size of the closure area shall be subject to the approval of the Agency. Enforcement of the closed area shall be the Contractor's responsibility at no additional cost to the City. Additional or alternate access routes for ingress/egress to the construction area shall be obtained by the Contractor at no additional cost to the City. Maintain access routes clear, clean, and free of debris.

Mobile equipment of any type operating within 50 feet of any seawall, building, groins, or other structure as determined by the Engineer shall be rubber wheeled. Tracked equipment shall not be permitted to operate within 50 feet of any seawall, building, groin, or other structure as determined by the Engineer.

Suspend fill operations when satisfactory results cannot be obtained because of environmental or other unsatisfactory site conditions as determined by the Engineer.

Disposal of unauthorized materials, materials removed from sand and materials considered unsuitable by the Engineer shall be in accordance with the Debris Removal item.

MISPLACED MATERIALS: The Contractor shall maintain and protect the work at all times until acceptance of the work. Any sand lost in transit, permitted to flow into the offshore waters or onto the upland from the point the sand is placed on the beach shall not be subject to payment and shall be removed by the Contractor at his own expense, to the satisfaction of the Engineer.

If any material is deposited other than in places designated or approved, the Contractor shall be responsible for removing such misplaced material and re-depositing it where directed at the Contractor's own expense.

SAFETY: The Contractor shall provide appropriate safety measures to protect the public during transporting and placement operations, subject to approval by the Engineer. The Contractor shall have a dedicated safety and flag person(s) on site at all times, whose sole responsibility is preventing the public from entering the fill placement area and to prevent unsafe conditions at sand delivery locations. Trucks shall be escorted by a flagman to facilitate safe vehicle operations and pedestrian protection.

COMPUTATION OF QUANTITIES: Where an Item for "Services of a Licensed Land Surveyor" is included in Contract, quantities shall be calculated by a licensed independent Surveyor.

NOTE: The Agency reserves the right to conduct its own surveys to verify quantities. This shall in no way relieve the Contractor of his responsibility for surveys.

MEASUREMENT & PAYMENT:
The quantity of **REMOVE AND STOCKPILE SAND** to be paid for shall be the number of **CUBIC YARDS** of displaced sand collected, transported, and stockpiled, as directed by the Engineer.

The price bid for **REMOVE AND STOCKPILE SAND** shall be a unit price per **CUBIC YARD** of sand collected, transported, and stockpiled and shall include the cost of all labor, materials, equipment, pumping, sheeting, bracing and any expenses for other incidental work and materials necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

The quantity of **REMOVE SAND** to be paid for shall be the number of **CUBIC YARDS** of sand collected, transported, removed and disposed of offsite, as directed by the Engineer.

The price bid for **REMOVE SAND** shall be a unit price per **CUBIC YARD** of sand collected, transported, removed and disposed of offsite and shall include the cost of all labor,

materials, equipment, pumping, sheeting, bracing and any expenses for other incidental work and materials necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

The quantity of **MECHANICALLY CLEAN STOCKPILE SAND** to be paid for shall be the number of **CUBIC YARDS** of sand stockpiled on site, mechanically cleaned and re-stockpiled, as directed by the Engineer.

The price bid for **MECHANICALLY CLEAN STOCKPILE SAND** shall be a unit price per **CUBIC YARD** of sand mechanically cleaned and re-stockpiled and shall include the cost of all labor, materials, equipment, and any expenses for other incidental work and materials necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

The quantity of **SAND MOVING OPERATIONS** to be paid for shall be the number of **CUBIC YARDS** of stockpiled sand from site, collected, transported, spread and graded within the Contract site, as directed by the Engineer.

The price bid for **SAND MOVING OPERATIONS** shall be a unit price per **CUBIC YARD** of stockpiled sand from site, collected, transported, spread and graded within the Contract site and shall include the cost of all labor, materials, equipment, pumping, sheeting, bracing and any expenses for other incidental work and materials necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

The quantity of **SAND MOVING OPERATIONS – MECHANICALLY CLEAN** to be paid for shall be the number of **CUBIC YARDS** of displaced sand collected, transported, mechanically cleaned, spread and graded within the Contract site, as directed by the Engineer.

The price bid for **SAND MOVING OPERATIONS – MECHANICALLY CLEAN** shall be a unit price per **CUBIC YARD** of displaced sand collected, transported, mechanically cleaned, spread and graded and shall include the cost of all labor, materials, equipment, and any expenses for other incidental work and materials necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

The disposal of unauthorized materials, materials removed from sand and materials considered unsuitable by the Engineer shall be paid under the "DEBRIS REMOVAL" item.

Services of a Licensed Land Surveyor - Custom shall be paid under its respective Item.

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ITEM NO. 33 **MECHANICAL RAKING OF BEACH**

WORK: Under this item, the Contractor shall perform mechanical raking of beach shoreline within the contract areas. Through raking of the sand, contractor will remove embedded and buried debris left by the storm. The means and methods of raking must be submitted to the Engineer for approval prior to commencing work.

Debris encountered during raking activities shall be stock piled. Its removal shall be paid for under "REMOVE AND DISPOSE OF DEBRIS". Contractor shall perform all work in accordance with the drawings, specifications, and under the direction of the Engineer.

MEASUREMENT AND PAYMENT: The quantity of **MECHANICAL RAKING OF BEACH** to be paid for under this Item shall be in **ACRES** of beach, in accordance with the plans and specifications and the direction of the Engineer.

The price bid shall be a unit price **ACRES** of beach raked and shall include the cost of all labor, materials, and equipment necessary to complete the work, including any incidental expenses, in accordance with the plans and specifications, to the satisfaction of and per the directions of the Engineer

Services of a Licensed Land Surveyor - Custom shall be paid under its respective Item.

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ITEM No. 34 **BULK SAND RE-GRADING - UNDERWATER**
ITEM No. 35 **REMOVE AND DISPOSE OF DEBRIS - UNDERWATER**

WORK: Under these items, the Contractor shall perform all **BULK SAND RE-GRADING – UNDERWATER** and **REMOVE AND DISPOSE OF DEBRIS – UNDERWATER** as directed by the Engineer. This shall include all work for excavating, transporting, and placement of sand and removal and disposal of debris encountered underwater as directed by the Engineer.

EXISTING UTILITIES: Prior to the start of work, establish the location and extent of surface and underground utilities in the work area. Maintain, protect, relocate, or extend utility lines to remain which pass through the work area. Cap, plug, or seal abandoned lines, and identify termination points at grade level with markers. Any services cut off or interrupted by the Contractor's operations shall be restored at the Contractor's expense. The Contractor shall identify outfall pipes in the work area prior to construction and promptly notify the Engineer in writing. Outfall pipes shall be marked and protected from damage during construction.

MATERIALS: Clean Beach Sand to be deposited on beach areas underwater shall include reuse of storm-deposited sand and reworked piles of beach sand, as determined by the Engineer, that:

- does not contain storm debris or associated waste materials;
- does not exhibit evidence of petroleum, petroleum spills or gross contamination;
- does not exhibit chemical staining or odors indicative of contamination;
- does not exhibit evidence of sewage or fecal contamination.

SITE PREPARATION: Establish extent of grading operation by area and elevation to meet and continue existing grades to be directed by the Engineer.

The Contractor shall examine the work area for structures that could be susceptible to damage or which could have further damage caused by the Contractor's operations and promptly notify the Engineer in writing. Protect existing structures, plant material, surfaces, and other features designated to remain in accordance with Section C, Article 14.

Prior to placement of sand, the Contractor shall remove from the work area all rock, rubble, trash, debris, and other objectionable material lying underwater within the beach fill area. The work shall be performed in accordance with the Bathymetric/Hydrographic Survey.

The Contractor shall provide the Agency with unlimited access to beach placement area(s) including staging and access areas for the duration of the project. The Contractor shall conduct his operations so as to comply with all Federal, State, and local laws pertaining to noise.

EXECUTION: The Clean beach sand shall be installed and spread underwater at the beach to the required grades and at locations as directed by the Engineer. Clean beach sand will be relocated as directed by the Engineer and generally to the following locations:

- The re-grading will take place within the limits of the swimming areas and as defined by the Engineer;
- Area to be re-graded will include up to low-tide line and beyond per Bathymetric/Hydrographic Survey and as directed by Engineer;

Debris identified in the Bathymetric/Hydrographic Survey shall be removed and disposed of prior to grading activities. Methods of removal shall be coordinated with Engineer prior to commencing work. Once debris has been removed from underwater, Contractor can commence grading activities

Spread and grade sand using an excavator or approved equivalent method, to the satisfaction of the Engineer. Equipment may need to be placed on barges in order to perform installation of sand and grading within water. Storm debris or associated material observed during grading operations shall be removed by hand and disposed as described below.

Provide uniform levels and slopes between new elevations and existing grades. Provide surface grades free from irregular changes.

The means and methods for loading and transporting clean beach sand will be determined by the Contractor and approved by the Engineer, but are anticipated to utilize standard equipment within the industry, such as bull dozers, front end loaders and large capacity all-terrain trucks with dumping capability. The removal of sand shall also include use of had or small tools to remove sand under and adjacent to the boardwalk, ramps and stairs as directed by the Engineer. The Engineer will inspect the Contractor's Equipments to ensure that it is clean and free of debris or contamination.

The Contractor can temporarily close a section of beach anticipated for daily placement operations based on anticipated production rates. The size of the closure area shall be subject to the approval of the Agency. Enforcement of the closed area shall be the Contractor's responsibility at no additional cost to the City. Additional or alternate access routes for ingress/egress to the construction area shall be obtained by the Contractor at no additional cost to the City. Maintain access routes clear, clean, and free of debris.

Mobile equipment of any type operating within 50 feet of any seawall, building, groins, or other structure as determined by the Engineer shall be rubber wheeled. Tracked equipment shall not be permitted to operate within 50 feet of any seawall, building, groin, or other structure as determined by the Engineer.

Suspend fill operations when satisfactory results cannot be obtained because of environmental or other unsatisfactory site conditions as determined by the Engineer.

SAFETY: The Contractor shall provide appropriate safety measures to protect the public during transporting and placement operations, subject to approval by the Engineer. The Contractor shall have a dedicated safety and flag person(s) on site at all times, whose sole responsibility is preventing the public from entering the fill placement area and to prevent unsafe conditions at sand delivery locations. Trucks shall be escorted by a flagman to facilitate safe vehicle operations and pedestrian protection.

COMPUTATION OF QUANTITIES: Where an Item for "Services of a Licensed Land Surveyor" is included in Contract, quantities shall be calculated by a licensed independent Surveyor.

NOTE: The Agency reserves the right to conduct its own surveys to verify quantities. This shall in no way relieve the Contractor of his responsibility for surveys.

MEASUREMENT & PAYMENT:
The amount indicated in the bid book is an assumed estimated amount which may vary from the actual amount to be paid to the Contractor during the term of this contract.

Payments will be based on clear and legible copies of paid bills or invoices detailing the materials, its purpose, location where installed, including the date it was installed.

For work performed, the Contractor shall receive payment in accordance with Chapter VI "Changes and Extra Work" Articles 25, 26, 27 and 28 of the Agreement.

The Contractor warrants that the cost of materials is the same as or lower than the costs charged to other customers of the Contractor for comparable materials. In addition, the Agency shall have the right to pay less than the costs submitted by the Contractor for materials when it is determined that the Contractor should have been able to purchase such materials at a lower cost than actually paid by the Contractor.

The Contractor will be reimbursed for equipment rentals. If rental cost exceeds cost of purchase, then tool shall be handed over to a Department of Parks and Recreation designated storage yard.

All payments for materials and equipment shall be subject to audit by the Department of Parks and to post-audit by the Comptroller.

In order to facilitate post-audit by the comptroller, the Contractor agrees to maintain adequate fiscal records of its expenditures under this agreement for a period of six (6) years unless notified otherwise by the City.

The allowance for **BULK SAND RE-GRADING - UNDERWATER** is $1,000,000 Dollars for the life of this Contract.

The allowance for **REMOVE AND DISPOSE OF DEBRIS - UNDERWATER** is $1,000,000 Dollars for the life of this Contract.

END OF PAGE

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ITEM NO. 36 SERVICES OF A LICENSED LAND SURVEYOR - CUSTOM

WORK: Under this item, the Contractor shall employ the services of a New York State licensed land surveyor to compile original and final cross-sections and volume computations for beach sand removal, debris removal and fill within the contract site.

DPR shall be permitted, at any time, to communicate directly with the subcontractor engaged under this item, for the sake of expediency and clarification. DPR shall be permitted to request any additional services not expressly listed herein but with the expertise and licensure of the subcontractor.

PURPOSE: To quantify and certify the volume of beach sand removal, debris removal, and fill.

APPROVAL OF SURVEYOR: Any NYS Licensed Land Surveyor may be submitted for approval. Written approval must be received from the Agency prior to commencing survey work.

The Contractor shall submit, for approval, the name and copy of current NYS Registration Certificate for the proposed surveyor to the Director of Surveying, Department of Parks and Recreation, (718) 760-6555.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

Submit digital files of survey results to DPR via email, compact disk, online file transfer service or other method approved by DPR. Digital files shall be of a format compatible with DPR software. The Contractor shall be responsible for converting digital files to the satisfaction of DPR.

1) Prior to actual field operation by Contractor: Create a base line with appropriate ties within the project site for the purpose of running cross-sections for volume computation. Run original grades on a fifty foot grid unless otherwise directed by DPR. Also note all significant intermediate grade changes. Provide DPR with two copies of a map at 1 "=20'- 0" showing original grades, base line with ties, and description and elevation of benchmark used.

2) After completion of all fillwork: Take final sections along the same grid and generate profiles of original grade and final grade plotted at 1 "=2'-0" vertical and 1 "=20'-0" horizontal. Compute End Areas and note data adjacent to each section on cross-section paper in ink. Provide notes where applicable.

3) Perform column computations for cut and fill using Average End area method. Provide total quantity of cut and fill. All pertinent calculation sheets shall be submitted with column computations. Submit all Field Notes.

4) Drawings/Final Submittal: Submit one original and two blueline prints showing original and final elevations. The original drawing shall conform to all aspects of the DPR Engineering Drawing specification (current issue), except as noted here. Major highlights are as follows:

- Drawings shall be 30" x 42" on a minimum four (4) mil Mylar.
- Drawings shall be ink or fixed line photo on minimum 4 mil Mylar
- CADD drawings shall be ink or ink jet.
- Drawings shall be right reading.
- Use of electrostatic, thermal, laser, or diazo reproduction processes for original drawings are not acceptable.
- Use of informational decals (i.e. Croy, Stampat, etc.) for final submittals are not acceptable.
- All drawings shall be properly labeled with the DPR contract number (i.e. M144-100M), complete project title, graphic scale, sheet number, and total number of sheets, date of survey, name, address, and telephone number of the surveying company, name and address of the Contractor.
- All drawings shall contain microfilm alignment arrows.
- It shall be the responsibility of the Contractor to ensure that the Surveyor is aware of and conforms to these requirements. Questions regarding the preparation of drawings should be directed to the Agency Map File, (718) 760-6798.

NOTES:

1] ALL DRAWINGS SHALL BE SIGNED AND SEALED BY APPROVED LICENSED SURVEYOR OR A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER.

2] Variations on the methods of computations used are subject to submittal and approval by the Director of Surveying, DPR.

DATUM: Vertical datum shall conform to contract topographic survey datum. If no survey exists, datum shall be in Borough President's datum.

MEASUREMENT & PAYMENT: For providing the **Services of a Licensed Land Surveyor** the Contractor shall be paid for the number of CREW DAYS of survey work performed by a crew as directed by the Agency.

The price per CREW DAYS bid shall include the cost of all labor, including the entire crew necessary to complete the survey, materials, equipment and all other incidental expenses to complete the work in accordance with DPR Specifications, and to the satisfaction of the Engineer. A Survey crew is defined as team comprising of a licensed surveyor and an instrument person and/or a rod person working for a minimum of 5 hours in a day.

The Contractor shall submit attendance records, including original paid invoices, which list each hour of work to be paid under this item, to the DPR in a form acceptable to the Department. In no event shall the DPR be required to pay for any hour, or any part thereof, that is not actually worked. The DPR shall make payments to the Contractor only following the review and audit of verifiable attendance records.

Payment for work performed under this item shall be made as follows:

75% - upon performance of field survey

25% - upon delivery of the required submittals to the satisfaction of the Engineer.

All work must meet the approval of the Construction Division and the Survey Section of the Department of Parks.

END OF PAGE

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ITEM NO. 37 COATING OF STEEL PILES

WORK: Under this Item, the Contractor shall apply coating to steel piles in accordance with the plans, specifications, and directions of the Engineer.

REFERENCE: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1186 (1993) *Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base*
ASTM E 376 (1996) Measuring Coating Thickness by Magnetic Field or Eddy-Current (Electromagnetic) Test Methods.

THE SOCIETY FOR PROCTECTIVE COATINGS (SSPC)

SSPC PS 11.01 (1991) Black (or Dark Red) Coal Tar Epoxy-Polyamide Painting System
SSPC SP 1 (1982) Solvent Cleaning
SSPC SP 10 (1994) Near-White Blast Cleaning
SSPC Paint 16 (1991) Coal Tar Epoxy-Polyamide Black (or Dark Red) Paint

MATERIALS:

CoatingSystems: Coal Tar Epoxy-Polyamide
System: SSPC PS 11.01
Paints: SSPC Paint 16 [Black]

SUBMITTALS: Submit the following:
Statements signed by responsible officials of manufacturer of product, system of material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or supplier, installer, or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personal qualifications.

EXECUTION:

EnvironmentalConditions: Start work only when ambient and curing temperatures are within limits of coating manufacturer's recommendations and at least 5 degrees F above dew point temperature.

Safety&HealthPrecautions: Materials listed in this section contain coal tar pitch volatiles, which are toxic. Follow safety procedures as recommended by manufacturer. Work in well ventilated area. Provide and require workers to use impervious clothing, gloves, face shields (8"

minimum), and other appropriate protective clothing necessary to prevent eye and skin contact with coating materials. Keep coatings away from heat, sparks and flame.

CleaningandPreparationofSurfaces

Solventcleaning. SSPC spl. Remove visible oil, grease, and drawing and cutting compounds by solvent cleaning.

Blastingcleaning. SSPC SP 10. After solvent cleaning, complete surface preparation by near-white blast cleaning. Remove residual dust from blasted surface by blowing with dry, oil-free air, vacuuming, or sweeping. Provide surface profile of at least 2½ mil thickness.

Proportioning&MixingofCoatingSystem
ProportioningofCoalTarEpoxy-PolyamideSystem. Coal tar epoxy-polyamide consists of a two-compound system. Component A contains a refined coal tar pitch, polyamide resin, and a polyamine promoter to accelerate curing rate. Component B is an epoxy resin. Mix both components in a ratio of 4 parts of Component A to 1 part of Component B by volume. Do not thin coatings when doing so will result in total volatile organic compounds exceeding limits enacted by local air pollution control districts. When thinning is allowed and is necessary for proper application, use xylene or the coating manufacturer's recommended thinner, to a maximum of ½ gallon to a 5-gallon batch.

MixingCoalTarEpoxy-PolyamideSystem: Power stir components to a smooth uniform consistency. Stir coating periodically during induction period. Follow coating manufacturer's requirements for induction time and pot life of mixed batches.

Two-CoatCoalTarEpoxy-PolyamideSystem. Apply each coat at a dry film thickness of not less than 8 mils.

DryFilmThickness: Proved total system minimum dry film thickness of 16 mils. Measure using a magnetic gauge.

Surfacestobecoated: All Steel Waterfront Construction

FieldTests: [Conduct testing in presence of Engineer.]
Holidaytesting. Prior to installation, test for holidays in total coating system. Use a low-voltage holiday detector of less than 90 volts in accordance with manufacturer's instructions. After repair of holidays by surface treatment and application of additional coating, or by manufacturer's recommendation, retest with a low-voltage holiday detector.
DryFilmThickness. After repair of holidays, measure dry film thickness using a magnetic dry film thickness gauge in accordance with ASTM D 1186 and ASTM E 376. Re-measure after an additional coat is applied, and add it to meet minimum thickness requirements.

MEASUREMENT AND PAYMENT: The quantity of **Coating of Steel Piles** to be paid for under this item shall be the number of **SQUARE FEET** of coating, in accordance with the plans, specification, and orders of the Engineer.

The prove bid shall be a unit price per **SQUARE FOOT** of coating shall include the cost of furnishing all labor, materials, coating, and equipment necessary to complete work as prescribed in the specifications, including the following additions:

END OF PAGE

NonStd. 12/19/12 (DPR)

ITEM No. 38 **ALLOWANCE FOR UTILITIES**

GENERAL: Under this item the Contractor shall pay Utility Company fees not included in other specification items and/or perform work to reconstruct or relocate utility lines and related equipment and installations not included in other specification items but deemed necessary by the Engineer to complete the work.

Work shall be performed by the Contractor's forces, approved subcontractor(s) or by Utility Company or appropriate City Agency's forces or hired contractor.

Work shall take place on a Time and Materials basis as per the Parks Standard Construction Contract. The Contractor shall notify the Engineer at least two days before work commences. No payment shall be made for work that takes place if the Engineer or other suitable Parks representative is not present to keep accurate records, unless express permission for the work to proceed on that date is granted by Parks.

All materials removed shall become property of the Contractor, to be promptly removed from the site and disposed of in a lawful manner.

All work performed by the Contractor or subcontractor shall conform to shop drawings submitted and approved in advance by DPR. Any unauthorized reconstruction shall not be paid by the City.

For any work to be performed by a subcontractor: a minimum of three (3) responsible bids for lump sum, prorated and/or unit item work shall be submitted to the Agency before the low bid subcontractor is approved. Work shall not commence until the subcontractor is approved. In the event that enough responsible bids cannot be obtained, the Contractor shall submit evidence of attempts to obtain said bids.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

SHOP DRAWINGS: Shop drawings for installations under this item shall be submitted for approval prior to fabrication. Design calculations for all structural components are required. Structural calculations and shop drawings shall be in accordance with New York City Building Code and any applicable codes and laws and shall be sealed and signed by a Professional Engineer licensed in the State of New York.

The Contractor shall submit to the Engineer legible, stamped paid receipts from the utility company(s) with the name of the Contractor and the name of the Parks Department facility clearly displayed.

MEASUREMENT & PAYMENT: The amount indicated in the bid book is an assumed estimated amount which may vary from the actual amount to be paid to the Contractor during the term of this contract.

Payments will be based on clear and legible copies of paid bills or invoices detailing the materials, its purpose, location where installed, including the date it was installed.

For work performed, the Contractor shall receive payment in accordance with Chapter VI "Changes and Extra Work" Articles 25, 26, 27 and 28 of the Agreement.

The Contractor warrants that the costs of materials is the same as or lower than the costs charged to other customers of the Contractor for comparable materials. In addition, the Agency shall have the right to pay less than the costs submitted by the Contractor for materials when it is determined that the Contractor should have been able to purchase such materials at a lower cost than actually paid by the Contractor.

The Contractor will be reimbursed for equipment rentals. If rental cost exceeds cost of purchase, then tool shall be handed over to a Department of Parks and Recreation designated storage yard.

All payments for materials and equipment shall be subject to audit by the Department of Parks and to post-audit by the Comptroller.

In order to facilitate post-audit by the comptroller, the Contractor agrees to maintain adequate fiscal records of its expenditures under this agreement for a period of six (6) years unless notified otherwise by the City.

The total cost of work and payments under this item shall not exceed $50,000.00

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ITEM NO. 39 **CLEAR EXISTING UTILITY VAULT**

WORK: Under this item, the Contractor shall clear existing utility vault for fountain at South Beach to be free of water, sand, and debris in accordance with the drawings, specifications, and under the directions of the Engineer.

DESCRIPTION: The intent of this item is to clean the utility vault for the fountain located at South Beach. Contractor will be responsible for pumping vault free of water, sand and removing debris.

EXECUTION:

The Contractor shall take the following steps when performing the work:

1. Contractor to pump excess water from vault. Water must be pumped into a filter fabric bag before being allowed to flow into nearby storm sewer.
2. Once water has been pumped from the vault, Contractor to remove excess sand by hand taking into consideration not to damage existing utility meters, panels, and other pertinent devices. The sand removal and disposal shall be paid for under "REMOVE SAND".
3. All bulk debris shall also be removed from the vault and will be paid under "REMOVE AND DISPOSE OF DEBRIS".

MEASUREMENT AND PAYMENT: The quantity of **CLEAR EXISTING UTILITY VAULT** to be paid for under this Item shall be **LUMP SUM** for the work, in accordance with the plans and specifications and the direction of the Engineer.

The price bid shall be a unit price of **LUMP SUM** and shall include the cost of all labor, materials, permits, and equipment necessary to complete the work, including any incidental expenses, in accordance with the plans and specifications, to the satisfaction of the Engineer

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ITEM NO. 40 TELEVISION INSPECTION FOR DRAIN LINES

WORK: Under this Item, the Contractor shall provide a closed circuit television inspection and digital video recording of those sewer drain lines as indicated on the Sketches or Contract Drawings, prepare the digital photographs of the specific views, and shall prepare a Report on the conditions of the existing pipes. The Report shall include conclusions and recommendations on the conditions of the pipes.

The Contractor shall perform minor cleaning within the pipe or brick sewers, which shall consist of the removal of incidental material as required for good quality video. This can be accomplished by associated camera jet nodders. In the event that major cleaning is required to before the sewer inspection, as determined by the Engineer, the Contractor shall delay inspection of those sections of sewer and shall keep a record of all sections not yet inspected.

METHOD: The Contractor shall conduct all the provisions of this Item in a manner approved by the Engineer.

All labor, experienced supervision, technicians, mobile television studio, electronic equipment, television and digital cameras, materials and equipment necessary and required to perform the Work of this Item shall be subject to the approval of the Engineer.

The Contractor shall give the Resident Engineer five (5) days notice of his/her intention to begin Work under this Item.

Operation of the equipment is to be controlled from above the ground with skilled technician at the control panel in a mobile television studio, controlling the movement of the television camera.

The technician shall have the capability to adjust the brilliance of the built-in lighting system and be able to change the focus of the television camera by remote control. The television camera shall be positioned as near as possible to the spring line of the sewer.

The television camera shall be attached to a rod or cable that shall be metered to indicate the exact location of the camera at all times.

An intercom system shall be used to coordinate the movement of the television camera at all times.

The view seen by the television camera shall be transmitted to a monitor of not less than fourteen (14) inches in width. The monitor shall be located inside the mobile television studio.

The Contractor's mobile television studio shall be large enough to accommodate up to four (4) persons comfortably seated for the purpose of viewing the monitor while the inspection is in progress.

The City's representative shall have access to view the television screen at all times.

A digital video recording shall be taken of the entire inspection, on CDR/ DVD+R. The Contractor shall ensure that the file format is compatible with Windows Media Player. The digital video recorder used shall be one on which sound and video information can be recorded. The speed and electronics of the digital video recorder shall be equal to or higher than that which has been standardized by the electronics industry.

The Contractor shall record the television inspection in color and shall produce a colored digital copy of the inspection. The digital recorder shall be one which sound and video information can be recorded at the highest speed standardized by the Electronics Industry.

During the course of inspection, the Engineer may indicate specific views appearing on the monitor which are to be photographed.

The size of the digital photographs shall not be less than 3" x 4".

The cost of the digital photographs, ordered to be taken by the Engineer, shall be deemed included in the contract price for Television Inspection for Drain Lines Item.

The electricity for all operations shall be provided by the Contractor at his own cost and expense.

An experienced supervisor who has a minimum of three (3) years experience in the field of pipeline inspection shall coordinate the entire inspection operation stated under this Item as approved by the Resident Engineer.

After completion of the television inspection and preparation of the Report, the supervisor shall furnish to both the Resident Engineer and the Contractor, a complete bound report of their permanent records. The report on the television inspections shall include but not be limited to: logging each section of the sewer televised, giving specific details as to service connections, water infiltration from the joints, and other points of interests noted during the inspection.

The digital photographs taken during the inspection shall be mounted within the report and keyed as to their exact location on the route sheet. The route sheet shall be provided by the Resident Engineer and shall become part of the supervisor's report.

The digital video recordings taken during the inspection shall be keyed as to their exact location on the route sheet and shall be submitted to the Resident Engineer with the results of the inspection and recommendations for future reconstruction of the sewer lines.

The Report and digital video recordings shall be delivered to the Resident Engineer not more than ten (10) days after the completion of the television inspection and digital video recording. This Report shall be signed by the experienced supervisor and Contractor present at the time of the television inspection. The Contractor shall perform the Work promptly, diligently and complete the Work without delay.

MEASUREMENT AND PAYMENT: The quantity of **TELEVISION INSPECTION FOR DRAIN LINES** to be measured for payment under this Item shall be the number of linear feet of pipe or brick sewer drain lines inspected and successfully televised and digital video recorded. All inspections will coincide with specific Plans, Specifications and directions of the Engineer.

The price bid shall be a unit per **LINEAR FOOT** for Television Inspection and Digital Video Recording for Drain Lines, and shall cover the cost of all labor, materials, equipment, power, insurance and necessary incidentals required to perform the Work. Television Inspection for Drain Lines and digital video recording shall include minor cleaning, the furnishing of the mobile television studio, supervision and technicians, the taking of digital photographs as ordered by the Engineer, preparing reports detailing the results of the inspection and all other Work incidental thereto, all in accordance with the Plans and Specifications and the directions of the Engineer.

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Rev. 06/30/09

ITEM NO. 41 CLEAR EXISTING STORM/SANITARY SEWER PIPE

WORK: Under this Item, the Contractor shall **CLEAR EXISTING STORM/SANITARY SEWER PIPE**, including the piping to a park main or street main, in accordance with the plans, specifications, and directions of the Engineer.

Initial Clearing: The initial work hereunder shall be performed during the early stages of construction and prior to the construction of new pavements, curbs, etc., thereby eliminating the necessity to remove and patch new construction which may be required due to the discovery and subsequent repair of damaged, collapsed, or restricted pipes.

METHOD: All pipes shall be cleared of debris by "Roto-Rooter" or other methods, pending prior approval of the Engineer. Damage incurred during the clearing operation shall be repaired at the Contractor's expense. All larger objects and other material that cannot be flushed out shall be removed by other methods. Clearing shall be considered satisfactory when not more than one-half inch (1/2") of sediment or caked material remains on any part of the structure or pipe. The Contractor may find it necessary to use dyes or other methods, to determine the rate and direction of flow in the drainage system. Payment for the use of these methods and materials will be included in the price bid for this item. Where damaged, collapsed or restricted pipes are found during the initial clearing and investigation, they shall be repaired under piping and excavation items in the contract, or in accordance with provisions of the „Agreement", Articles 25, 26, 27 and 28.
After the storm/sanitary piping has been cleared, it shall be maintained in satisfactory operating condition, until final acceptance and completion of all work under this contract.

Final Inspection: Prior to, or as part of the final inspection, the Contractor, in the presence of the Engineer, shall conduct such inspections and tests as are necessary to determine that the storm drain/sanitary house sewer facilities are in clear and functional condition, such condition being defined as equal to that achieved upon completion of the initial clearing. It shall be the Contractor's responsibility to perform such additional clearing as necessary to achieve such conditions at their own expense, at no additional cost to the City.

MEASUREMENT AND PAYMENT: The quantity of **CLEARING OF EXISTING STORM/SANITARY PIPE** to be paid for shall be the number of **LINEAR FEET** of pipe cleared, complete, in accordance with the plans, specifications, and directions of the Engineer.

The prices bid shall be a unit price per **LINEAR FOOT** of pipe cleared and shall include the cost of all labor, materials, and equipment necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

The cost of maintaining and clearing storm/sanitary sewer piping during and upon completion of the work will be deemed included in the price bid for this item. Payment for work performed under this item shall be as follows:

*50% payment upon completion of initial clearing

*50% payment after final inspection of storm/sanitary sewer facilities and upon completion of any subsequent remedial clearing.

Clearing all structures to the sump bottom shall be paid for under the separate item "Clear Existing Drainage Structure".

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Rev. 3/11/2010

ITEM NO. 42 CLEAR EXISTING DRAINAGE STRUCTURE

WORK: Under this item, the Contractor shall **CLEAR EXISTING DRAINAGE STRUCTURE** of all rubbish, dirt, debris, and any other materials, to the sump bottom in accordance with the specifications and directions of the Engineer. The Contractor shall also clear all in-flow and out-flow pipes of debris for three feet into the line from the outside wall of the structure.

All excess materials, dirt and debris generated by the Contractor's operations shall be removed from the site and disposed of.

The Contractor is responsible for any damage to existing structure caused by his operations and shall make repairs at no cost to the City.

MEASUREMENT AND PAYMENT: The quantity of **CLEAR EXISTING DRAINAGE STRUCTURE** to be paid for under this item shall be the number of structures cleared, in accordance with the specifications and directions of the Engineer.

The price bid shall be unit price for **EACH** structure cleared and shall include the cost of all labor, materials, equipment including flushing with a hose and incidental expenses necessary to complete the work in accordance with the specifications to the satisfaction of the Engineer.

Clearing of all existing storm/sanitary sewer piping and establishing positive drainage between structures shall be paid for under the separate item " Clear Existing Storm/Sanitary Sewer Pipe"

Reconstruction of drainage structure, where necessary, shall be paid under a separate item "Reconstruct Drainage Structure"

END OF PAGE

Rev 06/05/2000

ITEM NO. 43 ADJUST TOP OF UTILITY STRUCTURE TO GRADE

WORK: Under this item the Contractor shall remove existing frames and covers of utility structures (ie. existing catch basins, manholes, drain inlets and electric covers) and reset them to grades shown on the plan or directed by the Engineer. Work under this item includes excavation.

MATERIAL: All changes shall be made with acceptable brick laid in Portland cement mortar of one (1) part cement and two (2) parts of fine aggregate.

METHOD: All work shall be done in a workmanlike manner by competent masons, but if the frames or covers are broken through carelessness of the Contractor, he shall replace them with new ones equal to those broken, at his own expense.

MEASUREMENT AND PAYMENT: The quantity of **ADJUST TOP OF UTILITY STRUCTURE TO GRADE,** to be paid for, shall be the number adjusted in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price for **EACH** head adjusted and shall include the cost of all labor, materials, equipment and incidental expenses including excavation, necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

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8/11/98

ITEM NO. 44 **MISCELLANEOUS IRON AND STEEL**

WORK: Under this item, the Contractor shall furnish and place all cast iron, cast steel, wrought iron and steel, not especially included under other items, as shown on the plans and for miscellaneous castings, etc.

MATERIALS: All materials shall meet the requirements as given in Section B, "Materials and Methods of Construction".

CLEANING: Except as otherwise ordered by the Engineer, immediately prior to the final inspection the Contractor shall clean unimbedded surfaces that show evidence of loose mill scale, non-adherent rust, peeling paint and other deleterious matter in accordance with SP-2, Hand Tool Cleaning, a method generally confined to wirebrushing, sandpaper, hand scrapers or hand impact tools.

MEASUREMENT AND PAYMENT: The quantity of **MISCELLANEOUS IRON AND STEEL** to be paid for under this item shall be the number of pounds furnished and placed in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **POUND**, and shall include the cost of all labor, materials and equipment necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

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rev. 02/15/99

ITEM NO. 45 RESET CASTING AND ADJUST BASE OF MANHOLE

WORK: Under this item, the Contractor shall adjust damaged manholes and reset castings in accordance with the drawings, specifications, and under the directions of the Engineer.

DESCRIPTION: The intent of this item is to correct damages to manhole castings and risers that occurred as a result of the storm event. Contractor will be responsible for re-aligning manhole riser rings that have been shifted, making fixes to brick risers by installing new bricks and parging where indicated on the plans, re-installing castings that have been removed, and re-aligning castings that have been shifted.

MATERIAL:

Masonry:
Masonry used for manhole reconstruction shall be in accordance with New York City Department of Environmental Protection Specifications Section 2.09. Brick shall be made from clay or shale and burned so that they are free from cracks, warpage and exposed stone, pebbles or particles of lime. Masonry shall comply with Type 1 Brick, ASTM Designation C32, Grade MS.

MortarandGrout:

1. Conform to the requirements of ASTM C91 for masonry cement used for laying up dimension masonry.
2. Grouting material for use in grouting anchor bolts, franges, dowels and other miscellaneous items in concrete shall be a non-metallic, non-shrink grout which when mixed with water, will harden rapidly to produce a permanent anchoring bond. It shall be free of any corrosion promoting agents.

EXECUTION:

The Contractor shall take the following steps while addressing manhole adjustments and re-setting of steel manhole castings:

Pre-castConcreteManholeRiserRingAdjustments

1. Contractor shall re-align pre-cast concrete riser ring that were shifted with rest of manhole structure.
2. Contractor shall apply grout to the interior of the manhole where the riser ring had shifted.
3. Once manhole structure has been corrected, Contractor shall backfill manhole with sand to bottom level of first riser ring (approximately 15-inches below top grate elevation).

BrickRiserAdjustments

1. Contractor shall install new brick where manhole has been damaged.
2. Maintain masonry courses to a uniform dimension. Form vertical and horizontal joints of uniform thickness.

3. Lay masonry units in running bond.
4. Form flush mortar joints.
5. Lay masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
6. Install joint reinforcement 16 inches on center.
7. Set cover frames and covers securely to correct line and grade elevations.
8. Once manhole has been rebuilt, Contractor must apply grout on interior and exterior of manhole where bricks were installed.
9. Once complete, the Contractor shall backfill manhole with sand to approximately 15-inches below top grate elevation.

Re-setCastIronManholeCasting

1. Contractor shall remove and reinstall cast-iron manhole castings where they have been shifted, as identified on the plans.
2. Once the castings have been installed, the Contractor shall backfill manhole with sand to approximately 15-inches below top grate elevation.

MEASUREMENT AND PAYMENT: The quantity of **RESET CASTING AND ADJUSTMENT BASE OF MANHOLE** to be paid for under this Item shall per manhole, in accordance with the plans and specifications and the direction of the Engineer.

The price bid shall be a unit price per **EACH** manhole and shall include the cost of all labor, materials, permits, and equipment necessary to complete the work, including any incidental expenses, in accordance with the plans and specifications, to the satisfaction of and per the directions of the Engineer

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ITEM NO. 47 **RESET WATER FOUNTAIN AND ADJUST BASE**

WORK: Under this item, the Contractor shall remove and reset the water fountain once the base has been adjusted in accordance with the drawings, specifications, and under the directions of the Engineer.

DESCRIPTION: The intent of this item is to remove the water fountain, adjust the base if needed, and reset water fountain that were damaged during the storm event.

EXECUTION:

The Contractor shall take the following steps when performing the re-installation:

1. Contractor to disconnect water lines, as needed, in order to remove water fountain from its foundation.
2. Contractor shall carefully remove water fountain ensuring no damage occurs to water fountain during removal. Contractor will be responsible for damage to fountain that occurs during work.
3. Once water fountain is removed, contractor shall excavate around concrete pedestal foundation and re-align foundation to a level grade, as needed.
4. Once concrete pedestal is in a straight and upright position, level with grade, Contractor may backfill with suitable fill material to ensure stability of foundation. Backfill to be paid under "BORROWED FILL (TRUCK MEASURED)".
5. Water fountain shall be reinstalled on concrete foundation utilizing new anchor bolts. All hardware shall be 18-8 stainless steel type 304 in accordance with ASTM F593. All heads shall be vandal resistant.
6. Water lines shall be re-connected.
7. All plumbing work shall be performed by a licensed plumber.

MEASUREMENT AND PAYMENT: The quantity of **RESET WATER FOUNTAIN AND ADJUST BASE** to be paid for under this Item shall per **EACH** water fountains reset, in accordance with the plans and specifications and the direction of the Engineer.

The price bid shall be a unit price per **EACH** water fountain reset and shall include the cost of all labor, materials, permits, and equipment necessary to complete the work, including any incidental expenses, in accordance with the plans and specifications, to the satisfaction of the Engineer.

END OF PAGE

NonStd 12/18/12

ITEM NO. 48 **POLYURETHANE JOINT SEALANT FOR EXISTING CONCRETE PAVEMENT**

WORK: Under this Item, the Contractor shall install **POLYURETHANE JOINT SEALANT FOR EXISTING CONCRETE PAVEMENT** in accordance with the plans, specifications, and directions of the Engineer.

MATERIALS:

Expansion Joint: The expansion joint material shall be one of the following:

A premolded bituminous fiber joint filler as specified in Section B (requires a bond breaker and sealant) or,

A premolded closed cell expanded polyethylene foam joint filler such as Sonoflex F by Sonneborn Corporation, Shakopee, MN, (requires only sealant) or,

An approved equal of any of the above.

Bond Breaker: If bituminous fiber material is used, a bond breaker such as one-half inch (1/2") width polyethylene tape or five-eighths inch (5/8") diameter expanded polyethylene foam backer rod shall be installed as recommended by manufacturer. A bond breaker will not be required for a premoulded foam joint, but sealant is always required.

Sealant: Prepared expansion joints shall be coated with a primer followed by installation of a bond breaker and a self-leveling two-component polyurethane-based elastomeric sealant. Contractor shall apply Sikaflex 429 primer with Sikaflex - 2C, SL sealant, or Sonneborn 733 primer with Sonolastic SL 2 sealant or approved equal. Color of sealant shall be concrete gray. Asphalt cement will not be approved as a sealant.

Sikaflex products are manufactured by Sika Corp., Lyndhurst, NJ. Sonolastic products are manufactured by Sonneborn and Chem Rex Inc. Shakopee, MN.

METHOD:

Expansion Joints: Remove all material from expansion joints and clean out joint by routing, grinding or mechanical abrading to a minimum depth of one inch (1"). Where joint material is missing or has disintegrated, the entire joint shall be cleaned out to it's full depth.

Thoroughly clean expansion joints of dirt, loose particles, asphalt, tar, paint, wax, waterproofing, and curing compounds. When dry, apply primer to the clean surfaces by brushing on a thin, uniform coat.

Allow primer to dry tack free. Fill joint with joint filler where necessary and compressible backer rod and leave a one-half inch (1/2") deep void for placement of sealant. Cover adjacent sides of joints with masking tape to prevent spillage onto pavement.

Sealant: Fully mix the two (2) component sealant and pour into joint slot in one direction and allow to flow and level out as necessary. Smaller joints can be filled from a bulk-loading gun. Fill joints from bottom to prevent air voids. Tool lightly to smooth out ripples and maximize adhesion to the sides of joints. If bubbles form, wait five (5) to ten (10) minutes before tooling to break the bubbles. Remove excess sealant promptly as the work progresses and clean adjacent surfaces. Remove masking tape.

MEASUREMENT AND PAYMENT: The quantity of **POLYURETHANE JOINT SEALANT FOR EXISTING CONCRETE PAVEMENT,** to be paid for under this Item shall be the number of **LINEAR FEET** reconstructed in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be unit price per **LINEAR FOOT** and shall include the cost of all labor, materials, equipment, and incidental expenses necessary to complete the work, including expansion joint where necessary, bond breaker, and sealant, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

END OF PAGE

Rev. 06/04/01

ITEM NO. 49 RECONSTRUCT CONCRETE SURFACE (CUSTOM)

WORK: Under this Item, the Contractor shall **RECONSTRUCT CONCRETE SURFACE** including surface preparation, filling of spalls, cracks, and holes with concrete and cement slurry in accordance with the plans, specifications, and directions of the Engineer.

MATERIALS: Unless otherwise herein specified, all materials and methods of construction shall comply with Section B, "Materials and Method of Construction".

Cement Slurry: Polymer modified cementitious repair mortar shall be Thoroc HBA, as manufactured by Thoroc Inc., Jacksonville, FLA, or Sikatop 123 as manufactured by Sika Corp., Lyndhurst, NJ, or approved equal.

Concrete: Average concrete shall be as per DPR standard specification.

ReinforcementPrimer: Thoroc Zincrich as manufactured by Thoroc, Jacksonville, FLA, or Armatec 110 Primer by brush or approved equal.

ExpansionJoints: Expansion joints shall be replaced to match those existing, DPR Standard, or as directed by Engineer.

EXECUTION:

Surface Preparation: The Contractor shall clean and prepare the concrete surfaces as per recommendations of the manufacturer of the product to be applied.

All loose or unsound concrete shall be hammered out. Sawcut the perimeters of spalled areas to a depth half (1/2") inch below the existing reinforcement using an angle grinder to avoid feather edging and to provide a square edge. Where reinforcement is exposed, sandblast off loose scale. All removal and saw cutting shall be carefully done so as not to damage existing reinforcement. All cracks one quarter inch (1/4") and wider shall be routed out to sound concrete to a minimum width of one-half inch (1/2").

In case reinforcement is damaged, the contractor shall provide splice as per direction of the Engineer with no cost to the City.

Cleaning: Thoroughly clean all areas to be reconstructed by light sandblasting, high pressure water blasting, steam cleaning, heavy duty paint remover, or other approved means to remove dirt, oil, asphalt patches, algae, paint, graffiti, concrete sealers, or curing compounds, as directed by the Engineer. Sandblasting must be of an approved method, approved in writing by the Agency.

PrimingofReinforcement: Wherever concrete deterioration has resulted in exposure of reinforcing steel, the steel must first be properly cleaned (where reinforcement is exposed, remove minimum

one-half inch (1/2") of concrete behind steel bars and sandblast loose scale from entire diameter of steel bars) and prime. Apply a full coat of Thoroc Zincrich as manufactured by Thoroc, Jacksonville, FLA, or Armatec 110 Primer by brush. Allow to dry and apply a second coat.
In case reinforcement is damaged, the contractor shall provide splice as per direction od the Engineer with no cost to the City.

PrimingofSubstrate: The substrate of areas to be patched shall be soaked with clean water with no standing water (saturated surface dry). The damp surface shall be primed with a slurry coat. Slurry coat shall be scrubbed in using a mason's brush, filling all voids and pores. Slurry shall consist of a 2:1 mixture of Thoroc HBA and polymer liquid, or SikaTop.

RepairConcrete: All holes and spalled areas shall receive average concrete. The repair concrete shall be poured as soon as the slurry coat becomes tacky and before it dries.

Apply concrete to the prepared substrate, thoroughly compacting while building up to the required thickness.

Allow concrete to set to desired stiffness, then finish with wood or sponge float for a smooth surface. Trowelling is not recommended. Concrete shall be poured only when air temperature is at or above forty-five degrees (45°) Fahrenheit.

SUBMITTALS: Contractor shall submit all materials specification, test sheet and application procedure for the approval of the Engineer.

MEASUREMENT AND PAYMENT: The quantity of **RECONSTRUCT CONCRETE SURFACE** to be paid for under this Item shall be the number of **SQUARE YARD** of surface cleaned, patched, and resurfaced in accordance with the plans, specifications, and directions of the Engineer.

The prices bid shall be a unit price per **SQUARE YARD** and shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the reconstruction, including surface preparation, expansion joint reconstruction, repair of reinforcement (splice), application of reinforcement primer, cement slurry & repair concrete, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

END OF PAGE

NonStd. 12/19/12 (DPR)

ITEM NO. 50 **FULL DEPTH ASPHALT PAVEMENT**
ITEM NO. N/A **ASPHALT PAVEMENT FOR TENNIS COURTS**

WORK: Under these items, the Contractor shall furnish and install **FULL DEPTH ASPHALT PAVEMENT** and **ASPHALT PAVEMENT FOR TENNIS COURTS** in accordance with the plans, specifications, and directions of the Engineer.

DESCRIPTION: The asphalt pavement shall consist of a binder course and a top course to the dimensions as shown on the plans and details. The binder course shall be asphalt concrete, Type 3 and the top course(s) shall be Type 7 or Type 7F as defined by the N.Y.S. D.O.T. Standard Specifications. For tennis courts only the top course shall be installed in two (2) lifts as shown on the details. A Laser Spreader will be required for Tennis Courts. See 'Spreading of Top Course Tennis Courts Only'.

MATERIALS:

Asphalt: The following requirements shall apply for both Binder Course and Top Course:

Asphalt Cement shall be 100% soluble in Trichloroethylene. The mixing and placing temperature shall be 250 degrees to 325 degrees F. The viscosity of the asphalt shall be AC 20.

The mix shall have a minimum Marshall Stability of 500 lbs, flow of 8 to 16, and percent of air voids 3 to 5 percent. For full depth asphalt pavement (top and base courses) and the base course (only) for tennis courts, the asphalt mix may contain a maximum of 15% by weight of Recycled Asphalt Pavement (R.A.P.) material. The R.A.P. shall be certified by the inspection service before use and shall be free of dirt, debris, garbage, metal, glass and any other deleterious material. R.A.P. shall be tested by an approved laboratory for (%) percent asphalt cement before mixing. R.A.P. shall be screened prior to mixing so that final mix meets the specification delineated below. The City reserves the right to reject the R.A.P. asphalt mix if in the determination of the Engineer, the mix is contaminated with dirt, debris, garbage, metal, or glass. R.A.P. is not acceptable for the top courses of asphalt pavement for tennis courts.

R.A.P. shall comply with N.Y.S. D.O.T. Standard Specifications, Section 703-09 "Reclaimed Asphalt".

Binder Course: The material for the binder course shall meet the requirements of the latest edition of the N.Y.S. Department of Transportation Standard Specification Section 400 "Bituminous Pavements". Composition of the asphalt concrete binder shall be Type 3 as indicated in the following table:

COMPOSITION OF BINDER TYPE 3

SCREEN SIZE	GENERAL LIMITS % PASSING	JOB MIX TOL. %
1 1/2"	100	---
1"	95-100	---
1/2"	70-90	+/-6
1/4"	48-74	+/-7
1/8"	32-62	+/-7
No. 20	15-39	+/-7

No. 40	8-27	+/-7
No. 80	4-16	+/-4
No. 200	2-8	+/-2
Asphalt Content, %	4.5-6.5	+/-0.4

Top Course: The material for the top course shall meet the requirements of the latest edition of the NYS DOT Standard Specifications Section 400 "Bituminous Pavements". Composition of the asphalt concrete top course shall be Type 7 or Type 7F as indicated in the following table:

COMPOSITION OF TOP COURSE- TYPE 7
GENERAL LIMITS

SCREEN SIZE	% PASSING	JOB MIX TOL %
1/2"	100	-
1/4"	90-100	-
1/8"	45-70	+/-6
No. 20	15-40	+/-7
No. 40	8-27	+/-7
No. 80	4-16	+/-4
No. 200	2-6	+/-2
Asphalt Content %	6.0-8.0	+/-4

Forms: The forms for this work shall be of wood of an approved type and a minimum length of ten feet (10') for tangents and curves, unless otherwise shown of the plans.

All forms shall be straight, free from bends and warps at all times, and shall be cleaned thoroughly and oiled before pavement is placed against them; this cleaning and oiling being repeated daily as the forms are moved ahead. The forms shall rest firmly upon the thoroughly compacted sub-grade throughout their entire length, shall be joined neatly and tightly and staked securely to line and grade at least two hundred feet (200') in advance of the point of placing pavement by using at least three (3) bracing pins or stakes to each ten foot (10') length of side form, so that they will resist the pressure of the pavement and the impact of the roller without springing.

Approval of Sources of Supply: Approval of the sources of supply of aggregates shall be obtained from the Engineer prior to the delivery of material.

Inspection: Equipment, materials, and preparation of the mixtures will be subject to inspection and approval at the refineries and plant as may be directed. In conjunction therewith, the Contractor shall employ the services of an approved inspection service for the purposes of providing plant certification of the asphalt pavement mixtures conformance to these specifications. The inspection service shall be under the jurisdiction of and shall report directly to the Engineer.

Mix Samples: The Contractor shall submit, when required by the Engineer, samples of the materials and mixtures he proposes to use . Submittals shall be in accordance with General Conditions, Section C,

Special Provisions, Article 11. For the top course, the following samples shall be submitted:

(a)	Coarse aggregate	2 pounds
(b)	Fine aggregate	2 pounds
(c)	Filler	2 pounds
(d)	Asphalt	1 quart
(e)	Asphaltic mixture	10 pounds

Pavement Samples: The Contractor shall furnish for testing, when required by the Engineer, samples from the completed work. The areas of pavement so removed shall be replaced by new mixture and refinished without additional compensation.

Tests: Unless otherwise specifically provided, tests of materials shall be made in accordance with the latest specifications of the American Society for Testing and Materials.

Transporting: Shipments of material shall be made in tight vehicles previously cleaned of all foreign material, and delivered to the work, so that it will not become contaminated in any way.

INSTALLATION:

Subgrade Preparation: The subgrade shall be compacted with equipment that will yield the following density:

Cohesive Subgrade -	Minimum of 95% of AASHO T 180 Method D density
Cohesionless Subgrade -	Minimum 100% of AASHO T 180 Method D density

Spreading of Binder Course: Plant-Mixed binder course, shall be furnished and laid by means of a mechanical spreader of approved design to a depth which after final compaction shall be equal to the specified depth. In areas where the use of a mechanical spreader is impractical, as determined by the Engineer, other approved means of spreading and compacting may be permitted. The use of hand rakes will not be permitted. The Contractor shall use lutes where necessary.

Rolling and Compacting: The asphalt concrete binder course when properly spread shall be rolled with one or more power-driven rollers weighing not less than ten (10) tons. Rolling shall proceed continuously not in excess of the following rates:

Method of Placement	Square Yards/Hour/Roller
Hand	800
Machine	1200

After the final compaction, the binder course shall have a density of not less than 95% percent of the theoretical maximum density as calculated in accordance with Appendix B of the Asphalt Institute Manual, MS-2.

After the compaction of the binder course and before the placing of the top course, the binder course shall be checked for depressions. The Contractor shall check the entire area using a ten foot (10') wood

or metal straight-edge. Any depression greater than one-eighth inch (1/8") shall be corrected before the placing of the top course.

Tack Coat: All contact surfaces, including binder and intermediate, shall be applied with hot asphaltic cement, RC-70 or MC-70 before the surface mixture(s) are laid.

Spreading of Top Course: The top course mixture shall be furnished and laid by means of a mechanical spreader of approved design to a depth which after final compaction shall be equal to the specified depth. In areas where the use of a mechanical spreader is impractical, as determined by the Engineer, other means of spreading and compacting may be permitted. The use of hand rakes will not be permitted. The Contractor shall use lutes where necessary.

Where suitable abutting curb or headers are not available, grade control forms satisfactory to the Engineer shall be provided for screening. No extra payment will be made for these forms, but the cost of these shall be deemed included in the price bid for this item. The forms shall be removed, or with the approval of the Engineer, may be left in place.

Mixture shall be laid only where the surface to be covered is free from loose or foreign material, dry, and only when weather conditions, in the opinion of the Engineer, are suitable.

The Contractor shall provide suitable means for keeping all small tools clean and free from bituminous accumulations.

Rolling and Compacting: Upon completion of the spreading of the top course mixture, the material shall be consolidated thoroughly and uniformly with self-propelled tandem rollers. The top course shall be free from roller marks.

Rollers used for compacting the top course shall be well balanced, self-propelled, tandem rollers, weighing between seven (7) and eight (8) tons. The roller shall have a compression under the rear wheel of between 200 and 300 pounds per linear inch of roll at a rate not exceeding 800 square yards per hour per roller. After compaction, the surface course shall have a density not less than 97% theoretical maximum density as determined by Appendix B of The Asphalt Institute Manual MS-2.

In locations inaccessible to the roller, the compression shall be effected with iron tampers weighing not less than twenty-five (25) pounds and having a bearing area not exceeding forty-eight (48) square inches, or other impact type equipment.

Joints: Construction shall be as nearly continuous as is possible. The roller shall pass over the end of the laid mixture only when a practical necessity. When the operation of laying is interrupted, the end of the laid material shall be left unrolled until such time as work is resumed, in order that there be no joints throughout the project. If it is necessary to roll the end of the laid mixture during construction, or permit traffic to pass over such temporary end, thus consolidating it, the joint so made shall be cut back before re-commencing the operation of laying, in order to present a fresh, clean surface for contact with the newly placed material. The edges of such joints shall be painted with liquid asphalt (RC-70 or MC-70) and the use of hot smoothing irons in finishing such joints, shall not be permitted.

Spreading of Top Course for Tennis Courts Only: The top course shall be installed in two (2) lifts and

laid by means of a laser spreader of approved design. After the first lift the courts shall be flooded with water and allowed to drain. Any ponding or "bird baths" remaining after 45 minutes which cover a nickel shall be filled and leveled prior to applying the second lift. Depressions greater than one-eighth inch (1/8") shall be corrected.

Finished Surface: The surface of the top course of the pavement after compression shall be smooth and true to crown and grade, free from depressions, waves, bunches, overlapping seams and unevenness in surface.

After the compaction of the top course the Contractor shall check the entire paved area for depressions, using a ten foot (10') wood or metal straight-edge. Any depressions greater than three-sixteenths of an inch (3/16") shall be corrected by removing the top course of the affected areas, and replacing with new material to form a true and even surface.

DEFECTS: Where defects in composition, compression or finish appear in the completed work, such finished areas shall be removed to the full depth of the course and the defective material replaced with the required thickness of pavement at the expense of the Contractor for such removing and replacing.

COLD WEATHER: Asphaltic pavement shall be mixed and placed in accordance with minimum placement temperature as specified in the following table:

MINIMUM PLACEMENT TEMPERATURES

	MAT THICKNESS IN INCHES					
SURFACE TEMP. (F)	1/2"	3/4"	1"	1 1/2"	2"	3"
	TEMPERATURE OF THE MIX					
+32-40	--	--	--	305	295	280
+40-50	--	--	310	300	285	275
+50-60	--	310	300	295	280	270
+60-70	310	300	290	285	275	265
+70-80	300	290	285	280	270	265
+80-90	290	280	275	270	265	260
+90	280	275	270	265	260	255
ROLLING TIME MINUTES	4	6	8	12	15	15

Unless notified by the Engineer in writing, no material shall be mixed or placed when the temperature is at, or lower than 50 degrees F. Where paving between the temperatures of 33 and 50 degrees F is approved in writing by the Engineer, paving shall be permitted under condition that the Resident Engineer shall verify compliance with the minimum temperatures for both the temperature of the surface and temperature of the mix as shown in the chart above. The Contractor shall provide thermometers to verify compliance with the minimum requirements. No material shall be mixed or placed at temperatures of 32 degrees and below.

PRECIPITATION PROBABILITY: Placement of bituminous paving materials shall not be scheduled when the Precipitation Probability, obtained by the Contractor from the U.S. Weather Bureau within three (3) hours prior to the start of such operations, equals or exceeds fifty percent (50%). The Contractor shall notify the Engineer of the exact time at which the above information was obtained.

MEASUREMENT AND PAYMENT: The quantity of **FULL DEPTH ASPHALT PAVEMENT** and **ASPHALT PAVEMENT FOR TENNIS COURTS** to be paid for under this item shall be the number of **SQUARE YARDS** of full depth asphalt pavement or asphalt pavement for tennis courts furnished and placed to the lines and grades shown on the plans or as directed by the Engineer.

The price bid shall be a unit price per **SQUARE YARD** of full depth asphalt pavement or asphalt pavement for tennis courts, and shall include the cost of furnishing all labor, materials, and equipment, including inspection services, and other incidental expenses to complete the work in accordance with the plans and specifications and to the satisfaction of the Engineer, except excavation, which shall be paid for under their respective items. Foundation material for tennis courts, if required, shall be paid for separately.

All costs associated with plant inspections and laboratory tests shall be borne by the Contractor and shall be deemed included in the price bid for full depth asphalt pavement.

END OF PAGE

Rev. 11/2/2011

ITEM NO. 51 FOUNDATION MATERIAL FOR ASPHALT (TRUCK MEASURE)

WORK: Under this item the Contractor shall furnish and place **FOUNDATION MATERIAL FOR ASPHALT (TRUCK MEASURE)** in accordance with the plans, specifications, and directions of the Engineer.

INTENT: The intent of this item is to provide sound foundation/base material for installation of asphalt pavement on poor subgrade or for certain sports pavement including, but not limited to, tennis, running track, and roller hockey. See Standard Detail, Sheet 13 for all applications.

MATERIALS: Unless otherwise herein specified, all materials and methods of construction shall comply with Section B, "Materials and Methods of Construction".

Material for foundation shall consist of coarse aggregate per ASTM C33, free from organic or other deleterious material. Coarse aggregate shall be graded within the following limits:

Passing Sieve (Dry Analysis)	Percent by Weight
2"	100
1/4"	30-65
No. 40	5-40
No. 200	0-10

The Magnesium Sulfate Soundness loss after four (4) cycles shall be twenty percent(20%) or less per ASTM C88.

Coarse aggregate shall be Broken Stone or Gravel of approved quality conforming to the requirements of Section B, "Materials of Construction". **No recycled material shall be permitted.**

LABORATORY TESTING: The Contractor shall at the direction and discretion of the Engineer, or when quantities exceed (30) cubic yards , furnish a certified report by an approved Materials Testing Laboratory showing the materials composition, sieve analysis, plasticity index, and soundness of the representative samples of material they proposes to use.

The Engineer will deliver the samples to an independent testing laboratory and the Contractor shall bear the responsibility for all costs associated with laboratory testing. The Engineer reserves the right to reject on or after delivery any material, which does not, in their opinion, meet these specifications.

INSTALLATION:

PREPARATION OF FINE GRADES FOR NEW CONSTRUCTION: Before any aggregate is placed upon fine grade, the fine grade shall be prepared to line and grade and compacted where practical with an approved self propelled roller weighing not less than ten(10) tons. All hollows and depressions developed under rolling shall be filled with acceptable material and shall again be rolled. This process of

shaping, filling, and rolling shall be repeated until no depressions develop.

The Contractor shall remove from the subgrade all debris, foreign material, and all other undesirable material designated by the Engineer. The fine grade shall not be muddy or otherwise unsatisfactory when the pavement is placed upon it. If the fine grade becomes rutted or displaced, due to any cause whatsoever, the Contractor shall regrade same without additional payment.

SPREADING: Foundation material shall be evenly spread on prepared sub-grade in the position and to the depths shown on the plans or as directed by the Engineer. Foundation material shall be laid in four inch(4") layers (maximum) and rolled while wet with a seven(7) to twelve(12) ton tandem roller (or other approved method satisfactory to the Engineer) to the thickness shown on the plans or as directed by the Engineer.

SUBMITTALS: All submittals shall be submitted prior to installation and in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

A three(3) pound bag of stone aggregate shall be submitted for approval with a sieve analysis and the name of the supplier.

MEASUREMENT AND PAYMENT: The quantity of **FOUNDATION MATERIAL FOR ASPHALT (TRUCK MEASURE)** to be paid for under this item shall be the number of **CUBIC YARDS** of material installed, measured in trucks used for delivery, at the site of the work, in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **CUBIC YARD** of Foundation Material for Asphalt furnished and placed and shall include the cost of all labor, materials, equipment, and incidental expenses necessary to complete the work, including laboratory testing (if necessary) and preparation of fine grades, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

Excavation shall be paid for under its own contract item.

END OF PAGE

Rev. 12/14/2009

ITEM NO. 52 FOUNDATION MATERIAL FOR CONCRETE (TRUCK MEASURE)

WORK: Under this Item, the Contractor shall furnish and place foundation material for concrete in accordance with the plans, specifications, and directions of the Engineer.

MATERIALS: Unless otherwise herein specified, all materials and methods of construction shall comply with Section B, "Materials and Methods of Construction".

Material for Foundation shall be a straight run of single size aggregate and shall consist of either all one and one-half (1 1/2") inch stone or all three-quarter (3/4") inch stone in accordance with ASTM C33, free from organic or other deleterious material. In addition, Foundation Material may contain no more than five (5%) percent of fines, defined as aggregates passing a No.4 sieve or smaller.

The Magnesium Sulfate Soundness loss after ten (10) cycles shall be eighteen (18%) percent or less, as per ASTM C88. Coarse aggregate may be one of the following:

A. Broken Stone or gravel of approved quality and conforming to the requirements of Section B, "Materials of Construction".

B. Recycled Material consisting of at least ninety five (95%) percent by weight of the following:

1. Recycled Portland Cement Concrete Aggregate or
2. Recycled Portland Cement Concrete Aggregate mixed with Stone Gravel.

LABORATORY TESTING: The Contractor shall at the direction and discretion of the Engineer, or when quantities exceed (30) cubic yards, furnish a certified report by an approved Materials Testing Laboratory showing the materials composition, sieve analysis, plasticity index, and soundness of the representative samples of recycled material they propose to use.

The Engineer will deliver the samples to an independent testing laboratory. The Contractor shall bear the responsibility for all costs associated with laboratory testing. No recycled material shall be delivered to the site until positive test results have been obtained. The Engineer reserves the right to reject on or after delivery any material which does not, in their opinion, meet these specifications.

INSTALLATION:

Preparation of Fine Grades for New Construction: Before any concrete is placed upon fine grade, the fine grade shall be prepared to line and grade and compacted where practicable with an approved self propelled roller weighing not less than ten (10) tons. All hollows and depressions developed under rolling shall be filled with acceptable material and rerolled. This process of shaping, filling, and rolling shall be repeated until no depressions develop.

The Contractor shall remove from the subgrade all debris, foreign material, and all other undesirable material designated by the Engineer. The fine grade shall not be muddy or otherwise unsatisfactory

when the pavement is placed upon it. If the fine grade becomes rutted or displaced, due to any cause whatsoever, the Contractor shall regrade same without additional payment.

Preparation of Existing Foundation: Existing foundation material shall be supplemented as required to achieve the required thickness shown on the plans or provide for positive drainage of completed pavement.

Spreading: Foundation material shall be evenly spread on prepared subgrade or existing foundation in the position shown on the plans or as directed by the Engineer. Foundation material shall be laid in four (4") inch layers (maximum) and rolled while wet with a seven (7) to twelve (12) ton tandem roller (or other approved method satisfactory to the Engineer) to the thickness shown on the plans or as directed by the Engineer.

MEASUREMENT AND PAYMENT: The quantity of **FOUNDATION MATERIAL FOR CONCRETE** to be paid for under this Item shall be the number of **CUBIC YARDS,** measured in trucks as delivered, furnished and placed in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **CUBIC YARD** furnished and placed and shall include the cost of all labor, materials, equipment, and incidental expenses necessary to complete the work, including laboratory testing (if necessary) and preparation of fine grades, all in accordance with the plans and specifications, to the satisfaction of the Engineer

Excavation shall be paid for under its respective Item.

END OF PAGE

Rev. 08/13/2007

ITEM NO. 53 ASPHALT BLOCK PAVEMENT WITHOUT BASE - CUSTOM

WORK: Under this Item, the Contractor shall furnish and install **ASPHALT BLOCK PAVEMENT WITHOUT BASE** of various shapes, sizes, and finishes in accordance with the plans, specifications, and directions of the Engineer.

Pattern: The layout of the pavers shall be subject to approval by the Engineer. Layout patterns and paver designs are as indicated on the plans. All edges, borders, and corners of the paved area shall be finished to true and neat lines. Special cutting, soldier courses, color patterns, various shapes, and variations in size and finish are all to be included in the square yard price bid.

MATERIALS: Unless otherwise specified, the materials shall meet the requirements of Section B, "Materials and Methods of Construction".

Foundation: Existing concrete foundation.

BituminousSettingBed: Asphalt cement to be used in the bituminous setting bed shall conform to PGA 64-22, ASTM D6373, Performance Graded Asphalt.

The fine aggregate to be used in the bituminous setting bed shall be clean, hard sand with durable particles, free from adherent coatings, lumps of clay, alkali salts and organic matter. It shall be uniformly graded from "coarse" to "fine", all passing the No. 4 sieve and shall meet the gradation requirements when tested in accordance with the standard method of test for sieve or screen analysis of fine and coarse aggregates ASTM C136.

The dried fine aggregate shall be combined with hot asphalt cement, and the mix shall be heated to approximately 300 degrees F. at an asphalt plant. The approximate proportion of materials shall be seven percent (7%) cement asphalt and ninety-three percent (93%) fine aggregate. Each ton shall be apportioned by weight in the approximate ratio of 145 lbs. asphalt to 1,855 lbs. sand. The Contractor shall determine the exact proportions to produce the best possible mixture for construction of the bituminous setting bed and to meet construction requirements.

TackCoat: Tack coat shall be # 237 2% Neo-Asphalt, Brush Grade as manufactured by Hanover Architectural Products, Hanover, PA, or approved equal. Tack coat shall be an asbestos free, cold applied, rubberized asphalt cement, and shall consist of two percent (2%) neoprene rubberized asphalt with 150^0 softening point and 6.5 percent (6.5%) inorganic material.

AsphaltBlock: Unless otherwise noted on the plans, all pavers shall be hexagonally shaped asphaltic concrete blocks, eight inches (8") between parallel sides and two inches (2") in thickness, with a permissible plus or minus tolerance of one-sixteenth inch (1/16") in any dimension.

The blocks shall be composed of approximately 6.5% (plus or minus) .5% high melting point oxidized asphalt conforming to ASTM Designation D-312 for Type 3 asphalt and 94% graded

crushed rock aggregate and mineral filler; at the temperature of 300 degrees F the mix is compressed 4,000 lbs. per square inch by high speed hydraulic presses.

The blocks shall be as manufactured by Hanover Architectural Products, Inc. of Hanover, Pa., or approved equal. Top exposed surface of blocks shall have a ground finish, exposing a small aggregate, similar in appearance to Hanover's Matrix #10, unless otherwise noted in the Contract Drawings. The total recycled content of the blocks shall be 23.6%, or approved equal.

Forms: The forms for this work shall be wood of an approved type and a minimum length of ten feet (10') for tangents and curves, unless otherwise shown on the plans.

All forms shall be straight, free from bends and warps at all times, and shall be cleaned thoroughly and oiled before pavement is placed against them. This cleaning and oiling shall be repeated daily as the forms are moved ahead. The forms shall rest firmly upon the thoroughly compacted subgrade throughout their entire length, shall be joined neatly and tightly and staked securely to line and grade at least two hundred feet (200') in advance of the point of placement by using a least three (3) bracing pins or stakes to each ten foot (10') length of side form, so that they will resist the pressure of the pavement and the impact of the roller without springing.

Tests: Unless otherwise specifically provided, tests of materials shall be made in accordance with the latest specifications of the ASTM.

Transporting: Shipments of material shall be made in tight vehicles previously cleaned of all foreign material and delivered to the work so that it will not become contaminated in any way.

INSTALLATION:

The asphalt block shall be placed on either existing foundation material to remain, or new foundation material paid for under a separate item.

The Contractor shall remove from the base all debris, foreign and other undesirable material which interferes with satisfactory construction. The fine grade shall not be muddy or otherwise unsatisfactory when the base course material is placed upon it. If the fine grade becomes rutted or displaced, due to any cause whatsoever, the Contractor shall regrade same without additional payment. The Contractor shall trim base to smooth uniform lines to the satisfaction of the Engineer.

BituminousSettingBed: To install the setting bed over the surface of the existing base, place three-quarter inch (3/4") deep control bars directly over the base course. If grades must be adjusted, set wood chocks under depth control bars to proper grade. Set two bars parallel to each other approximately eleven feet (11') long (2" x 6" board). The depth of control bars must be set carefully to bring the paver, when laid, to the proper grade.

Place some bituminous material between the parallel depth control bars. Pull this bed with the striking board over these bars several times. After each passage, low porous spots must be showered with fresh bituminous materials to produce a smooth, firm and even setting bed. As soon as this initial panel is completed, advance the first bar to the next position in readiness for striking the next panel. Carefully fill up any depressions that remain after removing the depth control bars and wood chocks.

The bed shall be spread in a continuous workmanlike manner. Installation of base in spotted, different, and isolated areas will not be accepted. Bed depth greater than one and one-eighth inch (1-1/8") will not be acceptable.
After setting bed has cooled, it shall be rolled by hand with a one hundred pound (100 lb.) roller to eliminate sponginess and to prepare the surface for the installation of the tack coat. The setting bed shall be protected against all pedestrian traffic and construction equipment to insure a level surface for setting pavers.

Tack Coat: The neoprene-modified asphalt adhesive tack coat shall be applied by mopping, squeegeeing or troweling over the top of the bituminous setting bed so as to provide a bond between the bituminous setting bed and the paver.

Setting Pavers: When modified asphalt adhesive is dry to touch, carefully place the pavers by hand, ground finish side up unless otherwise specified, in straight course, with hand tight joints and uniform top surfaces, keeping full alignment according to the patterns shown on the plans.

Pavers may vary slightly in shade and tonality. Installer shall work from at least four (4) pallets at a time in order to create a uniform blend of paver shades.

Joints between blocks shall have a maximum width of one-eighth (1/8") inch. All blocks shall be cleaned when placed on the pavement. In no case shall the bituminous setting bed in front of the pavement be disturbed or walked on during the laying of the blocks.

Joint Filler: Upon the completion of the work of laying the blocks in each section to the satisfaction of the Engineer, the surface of the blocks shall be swept clean, and the joints filled with fine sand.

All joints shall be filled the same day as the blocks are laid. Filler shall not be applied if the blocks are wet or if the air conditions are such that the filler does not readily enter the joints. Filler shall be well worked into the joints by means of squeegees or other approved devices operating slowly backward and forward. Squeegeeing shall continue until the joints are flush with top surface. Immediately after the joints are filled, the pavement shall be lightly sprayed and cleaned.

DEFECTS: Where defects in material or installation appear in the completed work, such areas shall be removed to the full depth of the course and the defective material replaced with new for the

required thickness of pavement at the expense of the Contractor for such removing and replacing.

SUBMITTALS: All submittals shall be in accordance with General Conditions, Section C Special Provisions, Article 11.

Samples: The Contractor shall submit samples of each type of paver they propose to use for approval by the Designer. The samples shall be clearly labeled with Contract No., manufacturer, and finish. All pavers used on the work shall conform to the approved samples.

MEASUREMENT AND PAYMENT: The quantity of **ASPHALT BLOCK PAVEMENT WITHOUT BASE** to be paid for under this item shall be the number of **SQUARE YARDS** set, in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **SQUARE YARD** and shall include all labor, materials, equipment, and incidental expenses necessary to complete the work, including bituminous setting bed, neoprene adhesive, asphalt block pavers, and sand, if necessary, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

END OF PAGE

NonStd/12/28/12

ITEM NO. 5 4 REMOVE & RESET ASPHALT BLOCK PAVEMENT

WORK: Under this Item, the Contractor shall remove and reset asphalt block pavers in accordance with the plans, specifications, and directions of the Engineer.

MATERIALS: Unless otherwise specified, the materials shall meet the requirements of Section B, "Materials and Methods of Construction".

BituminousSettingBed: Asphalt cement to be used in the bituminous setting bed shall conform to PGA 64-22, ASTM D6373 for Performance Graded Asphalt.

The fine aggregate to be used in the bituminous setting bed shall be clean, hard sand with durable particles and free from adherent coatings, lumps of clay, alkali salts and organic matter. It shall be uniformly graded from "course" to "fine" and all passing the No. 4 sieve and meet the gradation requirements when tested in accordance with the standard method of test for sieve or screen analysis of fine and course aggregates ASTM C136.

The dried fine aggregate shall be combined with hot asphalt cement, and the mix shall be heated to approximately 3000 F. at an asphalt plant. The approximate proportion of materials shall be seven (7%) percent cement asphalt and ninety-three (93%) percent fine aggregate. Each ton shall be apportioned by weight in the approximate ratio of 145 lbs. asphalt to 1,855 lbs. sand. The Contractor shall determine the exact proportions to produce the best possible mixture for construction of the bituminous setting bed to meet construction requirements.

TackCoat: Tack coat shall be # 237 2% Neo-Asphalt, Brush Grade as manufactured by Hanover Architectural Products, Hanover, PA, or approved equal. Tack coat shall be an asbestos free, cold applied, rubberized asphalt cement, and shall consist of two percent (2%) neoprene rubberized asphalt with 1500 softening point and 6.5 percent (6.5%) inorganic material.

AsphaltBlock: Unless otherwise noted on the plans, all pavers shall be hexagonally shaped asphaltic concrete blocks, eight inches (8") between parallel sides and two inches (2") in thickness, with a permissible plus or minus tolerance of one-sixteenth inch (1/16") in any dimension.

The blocks shall be composed of approximately 6.5%+/- (plus or minus) .5% high melting point oxidized asphalt conforming to ASTM Designation D-312 for Type 3 asphalt and ninety four percent (94%) graded crushed rock aggregate and mineral filler; at the temperature of 300 degrees F0 the mix is compressed 4,000 lbs. per square inch by high speed hydraulic presses.

The blocks shall be as manufactured by Hanover Architectural Products Inc. of Hanover, Pa., or approved equal. Top exposed surface of blocks shall have a ground finish, exposing a small aggregate, similar in appearance to Hanover's Matrix #10, unless otherwise noted in the Contract Drawings. The total post-industrial recycled content of the blocks shall be 23.6 %, or approved equal.

LaboratoryTesting: The Contractor shall, at the direction of the Engineer, or when quantities exceed 30 (thirty) cubic yards, furnish a certified report by an approved Materials Testing Laboratory showing the materials composition, sieve analysis, plasticity index, and soundness of the representative samples of recycled material which they propose to use.

The Engineer will deliver the samples to an independent testing laboratory. The Contractor shall bear responsibility for all costs associated with laboratory testing. No recycled material shall be delivered to the site until positive test results have been obtained. The Engineer reserves the right to reject on or after delivery any material which does not, in their opinion, meet these specifications.

EXECUTION:

Remove asphalt block pavers, setting aside undamaged pavers for re-use. Contractor to clean blocks free of cement, mortar, sand, oil and grease prior to reuse.

The Contractor shall remove from the base all debris, foreign material, and all other undesirable material designated by the Engineer. The fine grade shall not be muddy or otherwise unsatisfactory when the pavement is placed upon it. If the fine grade becomes rutted or displaced, due to any cause whatsoever, the Contractor shall regrade same without additional payment.

BituminousSettingBed: To install the setting bed over the surface of the base, place three- quarter inch (3/4") deep control bars directly over the base course. If grades must be adjusted, set wood chocks under depth control bars to proper grade. Set two bars parallel to each other approximately 11 feet long (2" x 6" board). The depth of control bars must be set carefully to bring the paver, when laid, to the proper grade.

Place some bituminous material between the parallel depth control bars. Pull this bed with the striking board over these bars several times. After each passage, low porous spots must be showered with fresh bituminous materials to produce smooth, firm and even setting bed. As soon as this initial panel is completed, advance the first bar to the next position in readiness for striking the next panel. Carefully fill up any depressions that remain after removing the depth control bars and wood chocks.

Bed shall be spread in a continuous workmanlike manner. Installation of base in spotted, different and isolated areas will not be accepted. Bed depth greater than 1-1/8" will not be acceptable. After setting bed has cooled, it shall be rolled by hand with a 100 lb. roller to eliminate sponginess and to prepare the surface for the installation of the tack coat. The setting bed shall be protected against all pedestrian traffic and construction equipment to insure a level surface for setting pavers.

TackCoat: The neoprene-modified asphalt adhesive tack coat shall be applied by mopping, squeegeeing or troweling over the top of the bituminous setting bed so as to provide a bond between the bituminous setting bed and the paver.

SettingPavers: When modified asphalt adhesive is dry to touch, carefully place the pavers by hand, ground finish side up unless otherwise specified, in straight course, with hand tight joints and uniform top surfaces, keeping full alignment according to the patterns shown on the plans. Joints between blocks shall have a maximum width of one-eighth inch (1/8").

Pavers may vary slightly in shade and tonality. Installer shall work from at least four (4) pallets at a time in order to create a uniform blend of paver shades.

All blocks shall be cleaned when placed on the pavement. In no case shall the bituminous setting bed in front of the pavement be disturbed or walked on during the laying of the blocks.

JointFiller: Upon the completion of the work of laying the blocks in each section to the satisfaction of the Engineer, the surface of the blocks shall be swept clean, and the joints filled with fine sand. All joints shall be filled the same day as the blocks are laid. Filler shall not be applied if the blocks are wet or if the air conditions are such that the fill does not readily enter the joints. Filler shall be well worked into the joints by means of squeegees or other approved devices operating slowly backward and forward. Squeegeeing shall continue until the joints are flush with top surface. Immediately after the joints are filled, the pavement shall be lightly sprayed and cleaned.

DEFECTS: Where defects in material or installation appear in the completed work, such areas shall be removed to the full depth of the course and the defective material replaced with new for the required thickness of pavement at the expense of the Contractor for such removing and replacing.

SUBMITTALS: All submittals shall be in accordance with General Conditions, Section C, Special Provisions, Article 11. Samples: The Contractor shall submit samples of each type of paver they propose to use for approval by the Engineer. The samples shall be clearly labeled with Contract No., manufacturer, and finish. All pavers used on the work shall conform to the approved samples. A three (3) pound bag of stone screenings shall be submitted to the Engineer for approval, with a sieve analysis and the name of supplier attached.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE & RESET ASPHALT BLOCK PAVEMENT** to be paid for under this item shall be the number of **SQUARE YARDS** of pavement constructed as shown on the plans and in accordance with the specifications and directions of the Engineer.

The price bid shall be a unit price per **SQUARE YARD** of asphalt block pavement reset and shall include the cost of all labor, materials, equipment and incidental expenses necessary to complete the work, including asphalt pavers and setting bed, all in accordance with the plans and specifications to the satisfaction of the Engineer.

ENDOFPAGE

NonStd/12/28/12

ITEM NO. 55 **REMOVE AND RESET BLUESTONE PAVERS**

WORK: Under this Item, the Contractor shall furnish and install blue stone pavers in accordance with the plans, specifications, and directions of the Engineer.

MATERIALS:

Intent: Remove and reset bluestone pavers that have been removed and/or dislodged during the storm that is in acceptable condition and installation of new pavers. Assume 50% of the quantities provided in bid tabulation sheets will require new paver stones. This should be included in the price.

Pavers: The bluestone pavers shall be reasonably uniform in quality and texture throughout. If used, should be clean and free of mortar, asphalt, etc.

MortarBase: Bluestone pavers shall be placed in mortar setting bed. Mortar to conform to the requirements of ASTM C91 for masonry cement used for laying up dimension masonry

INSTALLATION:

Removal: The Contractor shall remove bluestone pavers from the limits of work with care. Any damage to pavers will be the responsibility of the Contractor. Pavers deemed acceptable for reuse by the Engineer, shall be set aside.

Subgrade: The Contractor shall excavate heaved subgrade areas and provide a level grade for setting of pavers.

ConcreteBase: Contractor to provide concrete base, where necessary, to be paid under "AVERAGE CONCRETE". Refer to DPR standard detail 8/14.

Placement: The Contractor shall apply a mortar setting base and place pavers securely in place. Stone shall be wiped clean of excess mortar while setting paver stone. All stones shall be set to level grade. Any depressions exceeding one-half (1/2) inch shall be corrected and brought to proper grade.

DEFECTS:

Where defects in composition, compression or finished appear in the complete work, such finished areas shall be removed to the full depth of the course and the defective material replaced with the required thickness of pavement at the expense of the Contractor for such removing and replacing.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE AND RESET BLUESTONE PAVERS** to be paid for under these Items shall be the number of **SQUARE YARDS** of each pavers constructed in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **SQUARE YARD** of pavers on mortar base in the work complete, and shall include furnishing of all labor, materials, equipment and expenses necessary to complete the work, including prepare the subgrade, Mortar Base and Bluestone Paving Units, and Joint Filler, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

ENDOFPAGE

NonStd 12/18/12

ITEM NO. 56 **AVERAGE CONCRETE**

WORK: Under this item, the Contractor shall furnish and place **AVERAGE CONCRETE** not especially included under other items where indicated on the plans or ordered by the Engineer, in accordance with the plans, specifications and directions of the Engineer.

MATERIALS: Unless otherwise specified herein, all materials and methods of construction shall conform to applicable portions of Section B, "Materials and Methods of Construction."

Cement: Air Entraining Portland Cement shall comply with the ASTM Specification for Portland Cement, Designation C150. It shall be Type IIA, Moderate Sulfate Resistant.

Concrete: Concrete shall be placed as shown. Concrete shall conform to N.Y.C. Dept. Of Transportation class B-32, Type II A, air entrained, moderate sulphate resistant. The batch shall contain a minimum of six (6) bags of cement per cubic yard of concrete, maximum of 6¼ gallons of water per bag, a maximum of three (3") inch slump, and compressive strength of 3200 psi. Large aggregate shall be limited to one (1") inch.

Maximum size aggregate is limited to a mixture of No. 1 size and smaller particles as described in Section B, Article 8.

FORMS: The Contractor shall furnish and place forms as required and shall remove them as directed by the Resident Engineer.

CURING: All finished concrete shall be protected and kept moist in accordance with Section B, Article 27 and as directed by the Engineer.

SURFACE FINISH: Immediately after removing forms, cut back all metal form ties wet and fill all voids and honeycombing with mortar, 1:2 mix.

Unless otherwise indicated on the contract plans, the concrete surfaces shall be rubbed smooth with carborundum bricks to the satisfaction of the Engineer.

MEASUREMENT AND PAYMENT: The quantity of **AVERAGE CONCRETE** to be paid for under this item shall be the number of **CUBIC YARDS** furnished and placed as shown on the plans and as directed by the Engineer.

The price bid shall be a unit price per **CUBIC YARD** of Average Concrete, and shall include the cost of all labor, materials, and equipment and incidentals necessary to complete the work, in accordance with the plans and specifications, to the satisfaction of the Engineer.

Excavationandreinforcementwillbepaidforseparately.

END OF PAGE

Rev. 06/15/99

ITEM NO. 57 **CONCRETE CURB**

WORK: Under this Item, the Contractor shall construct **CONCRETE CURB** and footings of the types shown on the plans or to match existing curbs, in accordance with the plans, specifications, and directions of the Engineer.

MATERIALS: Unless otherwise herein specified, all materials and methods of construction shall comply with Section B, "Materials and Methods of Construction".

Cement: Air Entraining Portland Cement shall comply with the ASTM Specification for Portland Cement, Designation C150.

Concrete: Concrete shall conform to N.Y.C. Department of Transportation Class B-32, Type IIA, air entrained, moderate sulphate resistant. The batch shall contain a minimum of six (6) bags of cement per cubic yard, a one and one-half (1 1/2") to four (4") inch slump, and compressive strength of 3,200 psi. Large aggregate shall be limited to one (1") inch.

Steel Bar Reinforcement: Reinforcement shall meet the requirements of the applicable paragraphs of Section "B", the N.Y.C. Building Code and the latest ASTM specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement", Designation A-615 and in accordance with the item "Steel Bar Reinforcement". Reinforcement shall be of the sizes and dimensions shown on the plans.

BondBreaker: If bituminous fiber material is used, a bond breaker such as one-half inch (1/2") wide polyethylene tape or five-eighths inch (5/8") diameter expanded polyethylene foam backer rod shall be installed as recommended by the manufacturer. A bond breaker will not be required for a premolded foam joint, but sealant is always required.

Sealant: A bond breaker and a non-sag multi-component polyurethane-based elastomeric sealant shall be installed in prepared expansion joints. The Contractor shall apply Sikaflex - 2C, NS sealant, or Sonneborn Sonolastic NP 2 sealant, or approved equal. Color of sealant shall be concrete gray. Asphalt cement will not be approved as a sealant.

Sikaflex products are manufactured by Sika Corp., Lyndhurst, NJ. Sonolastic products are manufactured by BASF Construction Chemicals, LLC., Shakopee, MN.

Expansion Joint: The expansion joint material shall be a premolded bituminous fiber joint filler as specified in Section "B" or an approved equal.

METHOD OF CONSTRUCTION: Curb shall be constructed in independent sections and shall have smooth plane ends separated by expansion joints of the size shown on the standard details. Steel bar reinforcement between expansion joints shall be secured to chairs of the proper height to hold them in position while concrete is poured. Distance between supporting chairs shall not greater than five (5') feet

apart. Reinforcing bars at expansion joints shall be bent to the horizontal and the ends wrapped with tar paper held by duct tape.

When fence posts are to be erected in concrete curb, sleeves shall be installed in the correct location, where shown on the plans. Sleeves shall be structurally rigid, cut to the required lengths and firmly set in the form in a vertical position.

Care shall be taken when installing curbs that all the requirements of Article 14, Section C, "Tree Work" shall be followed. In addition, where tree roots of one (1") inch or greater are encountered, or if directed by the Director of Arboriculture and Horticulture or his designated representative, the DPR Standard Detail for Root Bridging shall be used.

All forms shall be set true to line and grade and held rigidly in position. They shall be either of metal or of acceptable planed and matched lumber, and of such construction that a smooth surface shall be provided. After the forms are erected and reinforcing steel is set in place, all contact surfaces within forms shall be moistened. Concrete shall be placed in horizontal layers of uniform thickness, with each layer thoroughly consolidated before placement of the next layer. Thickness of each layer shall not exceed eighteen (18") inches with reinforced members. Stiff concrete mixes (low slump) shall be consolidated either by hand tools or by mechanical vibrators in accordance with Section B. The concrete shall be worked thoroughly around the reinforcement and around the pipe sleeves. In the use of internal vibrators, care shall be taken to avoid separation of aggregate and to avoid hitting the forms sufficiently to cause damage. Exposed concrete surfaces shall have a float finish. Surfaces shall be finished smooth and true by means of wooden or steel floats and have edges, including those of joints, rounded or chamfered.

Forms shall be left in place for a minimum of three (3) days or until the concrete has set sufficiently so that, in the opinion of the Engineer, they can be removed without damage to the curbing. The curbing shall immediately upon removal of the forms be wetted and rubbed down to a smooth and uniform surface by means of carborundum or other abrasive blocks. For this work, a competent and skilled finisher shall be employed. The Contractor shall do all the necessary work to join new curb to existing in a neat and workmanlike manner to the satisfaction of the Engineer.

CURB FOOTINGS: Curb footings shall be of the same concrete as the curbs and shall be constructed as shown on the details. Concrete footings shall be installed on all curb ends and corners with concrete forming tubes of the proper diameter and cut to the required lengths.

MATERIAL TESTING: When quantities exceed thirty (30) cubic yards in a single day, or at the direction and discretion of the Engineer, the Contractor shall furnish necessary concrete test cylinders to the Engineer at no cost to the City. The General Requirements of Section C, Article 5 and 11 will apply.

PROTECTION: The Contractor shall protect the curbing and keep it in first class condition until the completion of his operation at the site. Any curbing which is damaged at any time previous to the final acceptance of the work shall be removed and replaced with satisfactory curbing at the Contractor's

expense. The general specifications in "Materials of Construction", Section B, shall apply for protection and curing.

MEASUREMENT AND PAYMENT: The quantity of **CONCRETE CURB** to be paid for under this Item shall be the number of **CUBIC YARDS** of curbs and footings constructed and incorporated in the work, in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **CUBIC YARD** of Concrete Curbs and footings constructed and incorporated in the work complete, and shall include the cost of furnishing all labor, materials, equipment, and incidental expenses necessary to complete the work, including expansion material, sealant, tar paper, and steel bar reinforcement, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

Excavation shall be paid for under its' respective Item.

END OF PAGE

Rev. 01/26/2012

ITEM NO. 58 STEEL BAR REINFORCEMENT

WORK: Under this item, the Contractor shall furnish and place steel bar reinforcement and dowels not included under other items as shown on the plans or ordered by the Engineer.

MATERIAL: Reinforcement shall meet the requirements of Section B, "Materials and Methods of Construction".

METHOD:

BENDING: All bars shall be bent cold. Only competent mechanics shall be employed for cutting and bending, and proper appliances shall be provided for such work.

The reinforcement shall be bent to the shapes shown on the plans. Bends for stirrups and ties shall be made around a pin having a diameter not less than two times the minimum thickness of the bar. Hooks shall conform to Section C-26-1526.0, N.Y. City Building Code. Bends for other bars shall be made around a pin having a diameter not less than six times the minimum thickness of the bar, except that for bar larger than one inch the pin shall not be less than eight times the minimum thickness of the bar.

Reinforcement shall be formed to the dimensions indicated on the plans before it is embedded in the concrete.

SPLICES: All splicing shall be as specified in Section B.

PLACINGANDFASTENING: Placing and fastening shall be as specified in Section B.

Before any concrete is placed, all mortar shall be cleaned from the reinforcement. No concrete shall be poured until the Engineer has inspected the placing of the reinforcing metal and permission to place concrete is granted. All concrete placed in violation of this provision shall be rejected and removed.

SUBMITTALS: All submittals shall be submitted in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11. In conjunction with the use of controlled concrete, for structural applications, or where required by the DPR structural Engineer the contractor shall submit order forms, bar lists and bending diagrams as follows:

As soon as an order for material is placed by the Contractor, two (2) complete copies of the order shall be furnished by the Contractor to the Engineer; all orders shall show the contract number and the names of the manufacturer's, the name of the structure for which the material is intended, and shall state that the material is subject to the requirements of the specifications of the Department. To each order shall be attached a complete copy of that part of these specifications which applies to the materials ordered

thereby.
Before ordering any material which differs from that shown on the plans or in bar list, the Contractor shall submit bar lists and bending diagrams showing the proposed changes to the Engineer for approval.

Unless otherwise noted, when no bar list appears on the plans, the Contractor shall submit bar lists and bending diagrams to the Engineer for his approval before ordering any materials.

The Contractor shall carefully check and assume full responsibility for the accuracy of all bar lists.

The acceptance at any time of any material shall not be a bar to its future rejection if subsequently found to be defective or inferior in quality or uniformity to the material specified.

MEASUREMENT AND PAYMENT: The quantity of **STEEL BAR REINFORCEMENT** to be paid for under this item shall be the number of **pounds** of steel bars, including dowels, furnished and incorporated in the work in accordance with the plans and specifications.

The weight of metal will be computed from the table of weights under Steel Bars in Section B.

In case the Engineer allows the substitutions of larger bars than have been specified, payment will be made only for the amount of metal which would have been required if the specified size of bar had been used.

The price bid shall be a unit price per **POUND** of steel bar reinforcement furnished and incorporated in the work complete, and shall include the cost of furnishing all labor, material and equipment to bend, cut and maintain the reinforcement in place, and other incidentals necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

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rev. 7/16/98

ITEM NO. 59 STEEL FABRIC REINFORCEMENT

WORK: Under this item the Contractor shall furnish and place sheets of steel fabric in concrete pavements, of the size shown on the plans in accordance with the plans, specifications and directions of the Engineer.

MATERIALS: Unless otherwise herein specified, all materials and methods of construction shall conform to the requirements of Section B, "Materials and Methods of Construction".

Steel fabric shall meet the requirements given for cold drawn steel wire for concrete reinforcement, in the Standard Specifications of the ASTM Serial Designation A-82, latest revision, except that sample shall be taken as directed by the Engineer. All welded steel fabric shall meet ASTM Specification A-185, latest revision.

Steel fabric shall consist of longitudinal members with transverse members at right angles thereto. All points of intersection of the members shall be firmly connected in approved manner.

All steel fabric shall be delivered in flat sheets or rolls of such widths as to fit the concrete pavement slabs as shown on the plans.

PLACEMENT: All outside wire shall not be more than three inches (3") from edges of slabs; when the sheets or rolls are not full length or width they shall overlap at least six inches (6").

MEASUREMENT AND PAYMENT: The quantity of **STEEL FABRIC REINFORCEMENT** to be paid for under this item shall be the number of **square yards** of steel fabric reinforcement installed in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **SQUARE YARD** of steel fabric reinforcement and shall include the cost of all labor, materials and equipment necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

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rev. 8/7/98

ITEM NO. 60 **CORE DRILLING 3" DIA.**
ITEM NO. N/A **CORE DRILLING 4" DIA.**

WORK: Under this Item, the Contractor shall Core Drill holes of the indicated sizes into rock or masonry for the setting of fence and gate posts, as indicated on the plans or as directed by the Engineer.

METHODS: Holes shall be drilled in masonry and rock by approved core drilling methods and equipment. The holes shall be of the sizes and depths indicated on the plans, required by local conditions or as directed by the Engineer. Care shall be taken while drilling in masonry that no damage will be done. Any damage to existing masonry resulting from drilling operations shall be repaired by the Contractor at his own cost and expense.

MEASUREMENT AND PAYMENT: The quantity of **CORE DRILLING 3" DIAMETER** and **CORE DRILLING 4" DIAMETER** to be paid for, shall be the number of **LINEAR FEET** of holes actually drilled, of the indicated sizes, in accordance with the plans, specifications, and directions of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of holes drilled of each size and shall include the cost of all work, labor, materials, and equipment required to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

END OF PAGE

Rev. 12/16/97

ITEM NO. N/A CHAIN LINK FENCE 3'-6" HT.
ITEM NO. N/A CHAIN LINK FENCE 4'-0" HT.
ITEM NO. N/A CHAIN LINK FENCE 6'-0" HT.
ITEM NO. 61 CHAIN LINK FENCE 8'-0' HT.
ITEM NO. N/A CHAIN LINK FENCE 10'-0" HT.
ITEM NO. N/A CHAIN LINK FENCE 12'-0" HT., 1 3/4" MESH (TENNIS)
ITEM NO. N/A **CHAIN LINK FENCE 12'-0" HT., 2" MESH**
ITEM NO. N/A CHAIN LINK FENCE 14'-0" HT.
ITEM NO. N/A CHAIN LINK FENCE 16'-0" HT., 1" MESH (HANDBALL)
ITEM NO. N/A CHAIN LINK FENCE 16'-0" HT., 2" MESH
ITEM NO. N/A CHAIN LINK FENCE 18'-0" HT.
ITEM NO. N/A CHAIN LINK FENCE 20'-0" HT.
ITEM NO. N/A SINGLE GATE FOR CHAIN LINK FENCE 4' HT.
ITEM NO. N/A SINGLE GATE FOR CHAIN LINK FENCE 6' HT.
ITEM NO. N/A SINGLE GATE FOR CHAIN LINK FENCE 8' HT. & OVER
ITEM NO. N/A DOUBLE GATE FOR CHAIN LINK FENCE 4' HT.
ITEM NO. N/A DOUBLE GATE FOR CHAIN LINK FENCE 6' HT.
ITEM NO. N/A DOUBLE GATE FOR CHAIN LINK FENCE 8' HT.
ITEM NO. N/A DOUBLE GATE FOR CHAIN LINK FENCE 10'HT. & OVER

WORK: Under these Items, the Contractor shall furnish and erect powder coated chain link fences and powder coated chain link fence gates of the heights and sizes shown on the drawings, in accordance with the plans and specifications and directions of the Engineer. In addition, the Contractor shall furnish extra materials to D.P.R. M. & O. as specified under heading EXTRA MATERIAL.

INTENT: It is the intent of these items to effectively enclose the areas shown on the plans, and when new fences terminate at existing or new structures or fences within the areas or adjacent to the areas, the clear spaces between the fences and structures shall not exceed three and one half (3 1/2") inches. Closures, if necessary, shall be made by the Contractor in a manner approved by the Engineer. Payment for such closures will be made per linear foot or a fraction thereof, at the unit prices bid for the fences.

MATERIAL: All fittings, hardware and equipment shall be designed to carry one hundred percent (100%) overload.

Malleable iron castings shall be powder coated after hot dipped galvanizing in accordance with ASTM Serial Designation: A153.

Pressed steel fittings and appurtenances shall be powder coated after hot dipped galvanizing in accordance with ASTM Serial Designation: A123.

All fittings, hardware and equipment shall be powder coated of a color to match the framework and shall be of the materials listed in the following schedule:

FENCE/GATE PART	MATERIAL
Boulevards, Corner (Split) Fittings and End Fittings	Malleable Iron or Pressed Steel-3/16" thick
Post Caps and Post Line Tops	Malleable Iron or Pressed Steel - 3/16" thick
Couplings	Galv. Steel Pipe - 1/8" thick with 1/4" Dia. Full Depth Rivet
Gate Hinges	Malleable Iron or Pressed Steel-1/4" thick with 1" Dia. Stainless Steel Pin Welded to 1/2" thick Pin Support
Bolts and Nuts	Galv. Steel or Stainless Steel as indicated on Plans
Tension Bars	1/4" x 3/4" Galv. Steel for 2" and 1-3/4" Mesh, 3/16" x 3/8" Galv. Flat Steel for 1" Mesh
Tension Bands	1/8" x 1" Pressed Steel
Truss Rods	1/2" Dia. Galv. Steel
Truss Tightener	3/8" x 1" Galv. Steel
Truss Clamp	1/4" Pressed Steel
Gate Locking System	Rotating Locking Mechanism– Galv. Steel pipe. All other components shall be mild steel.
Gate Stop	7/16" thick malleable iron
Drive Pins and Set Screws	Stainless Steel, 18-8

POSTS AND RAILS: TYPE I - Posts and rails shall be standard weight galvanized steel pipe of the sizes shown on the plans and shall conform to ASTM Serial Designation F-1083 Schedule 40, except for chain link fence posts 20'-0" height, which shall be Schedule 80. Posts and rails shall be hot dip galvanized inside and outside in accordance with ASTM Serial Designation F-1083 or:

For fence up to and including ten (10) feet height, posts and rails may be TYPE II, SS-40 steel tubing as manufactured by Allied Tube and Conduit Corp. of Harvey, Illinois, or approved equal. Tubing must conform to ASTM A1011/A1011M, cold rolled steel pipe and coated with a minimum of 0.9 ounces of zinc per square foot, a minimum of 15 micrograms of zinc chromate per square inch. Steel

pipe supplied under this option shall be of the same outside diameter as Schedule 40 pipe and achieve minimum yield strength of 50,000 p.s.i.

SURFACE COATINGS: All posts, rails and fittings shall be powder coated with either polyvinyl chloride (PVC) or TGIC-Polyester (with the exception of the turnbuckles and threaded ends of the truss rods, both of which shall be sprayed with powder coat touch-up after installation).

Galvanizing of all components shall provide an acceptable substrate for applied powder coatings. No lacquer, urethane or other coatings which would prevent proper adhesion of powder coating shall be applied to the pipe.

The powder coating shall be applied to the galvanized surfaces in such a manner that the coating will not peel off. Insure surfaces to be coated are clean and dry and free of grease, dust, rust, etc. All galvanized parts, prior to powdercoating, shall first receive phosphating and chromatizing treatments to improve the adhesion of the surface coating. Color to be black unless otherwise indicated on the plans.

The entire fence installation shall be coated with one of the two following types of powder coating, (with the exception of gates, all of which shall be TGIC-Polyester and fabric which shall always be PVC). All Fence components shall be coated on all surfaces, of a color to match the framework. All coated surfaces shall comply with the adhesion specifications listed in ASTM F1043.

TYPE A - Polyvinyl Chloride Powder Coating: PVC Powder coating shall be applied to the galvanized steel or iron by the fluid bed method to a preheated base which has been cleaned and primed prior to submersion in vinyl, resulting in a firm bond between the PVC and the metal. PVC shall be applied to a film thickness of 10 to 15 mils on framework and fittings, and 7 to 12 mils on fabric without voids, tears or cuts that reveal the substrate and shall thoroughly adhere to the metal without peeling when scratched with a pick device or knife blade point.

TYPE B - TGIC-Polyester Powder Coating: TGIC-Polyester Powder shall be applied to the galvanized steel or iron in such a manner that the coating will not peel off. The TGIC-Polyester shall be applied at a film thickness of 3 to 6 mils by electrostatic spray process and bake finished per manufacturer's directions. The TGIC-Polyester shall be applied without voids, tears or cuts that reveal the substrate and shall thoroughly adhere to the metal without peeling when scratched with a pick device or knife blade point.

TESTS:

Field Test for PVC Powder Coating: As per ASTM F668, three sample sections of the PVC powder coated fence shall be tested for bonding of the powder coat to the metal. Each test will consist of making two cuts parallel to the axis of the pipe or fitting, through the coating, appx. 1/16 inch (1.6 mm) apart, at least 1/2 inch (12.7 mm) long. With a knife peel back a section of the coating between 1/8 inch (3.2 mm) and 1/4 inch (6.4 mm) long to produce a tab. Attempt to remove the 1/16 inch strip of coating by pulling the tab. The fence shall be deemed acceptable if the coating breaks rather than separates from the metal on all three samples.

Laboratory Test for TGIC-Polyester Powder Coat: At the discretion of the Engineer, a sample of the TGIC-Polyester powder coated fence shall be laboratory tested for bonding of the powder coating to the metal. Test shall be the Cross Hatch test per ASTM D3359, Method B. Failure to satisfactorily pass this test shall be a basis for rejection.

TOUCH-UP & REPAIR: For minor damage caused by installation, transportation, field welding and cutting of metal powder coated surfaces: clean welds, bolted connections, abraded or sawcut areas, then:

1. On welded and cut surfaces, apply organic zinc repair paint complying with ASTM A780, then repair powder coating per number 2 below. Galvanizing repair paint shall have 65 percent zinc by weight. Thickness of repair paint shall be not less than that required by ASTM A123.
2. On damaged powder coated surfaces, touch-up finish in conformance with manufacturer's recommendations. Provide touch-up such that repair is not visible from a distance of six feet (6').

FABRIC: Fabric shall be hot dip galvanized steel wire mesh as per ASTM A641, with a thermally fused polyvinyl chloride powder coating of 7 to 12 mils thick as per ASTM F668 class 2b. Color to match framework. Fabric shall be produced by methods recognized as good commercial practices. Core wire tensile strength shall be 75,000 psi (517 MPa).

Wire used for the manufacture of fabric shall meet the requirements of ASTM F668 and shall be capable of being woven into fabric without the PVC coating cracking or peeling. PVC coating shall be a dense, impervious covering free of voids. Excessive roughness, bubbles, blisters, bruises and flaking will be a basis for rejection. PVC shall be thermallyfused. Bonded or extruded and glued surface coating will not be permitted. Fabric shall be stretched to provide a smooth, taut, uniform appearance free from sag.

Field Test: PVC coating on fabric shall be field tested for adherence to the metal as outlined elsewhere in this specification.

Thickness of Fabric: One (1) Inch Mesh: Uncoated wire dimension shall be 0.120 inches in diameter (11 gauge). Zinc coating shall be 0.30 ounces per square foot of wire surface.

One and Three Quarter (1-3/4) Inch and Two (2) Inch Mesh: Uncoated wire dimension shall be 0.148 inches in diameter (9 gauge). Zinc coating shall be .3 ounces per square foot of wire surface.

Selvages: Fabric shall be barbed at the top and knuckled at the bottom on fences over 6'-0" high. Fabric on fences 4'-0" and 6'-0" shall be knuckled top and bottom. Loops of knuckled fabric shall be closed or nearly closed. The wire ends of barbed selvages shall be twisted in a closed helix of 1-matching turns and cut at an acute angle. The length of the ends beyond the twist shall be at least 1/4 inch long. One (1) inch mesh shall be knuckled both top and bottom.

TIES: Tie-wire core thickness shall be 9 gauge (0.148") wrought aluminum alloy 1100-H16 wire with an extruded vinyl coating in accordance with ASTM A641 Class 3. PVC shall be applied to a film thickness of 20 to 22 mils. Ties shall be spaced fifteen (15) inches apart on rails and twelve (12) inches apart on posts. The ends of ties shall be wound in a telegraph twist two and one half turns.

Color to match mesh. Contractor shall touch-up PVC coating on ties damaged as result of installation.

GATES: Gates shall be furnished and installed on reinforced concrete slabs where indicated on the plans or directed by the Engineer. All gates shall be galvanized steel and shall be TGIC-Polyester powder coated after fabrication per requirements for fence framework outlined elsewhere in this specification. Welded joints shall have a suitable rust preventive coating applied to the welds prior to powder coating. Gate fabric shall match line fabric adjacent to gate opening. Gates shall be installed plumb, level and secure for full opening without interference. The hinges shall be so designed to permit the gate to swing a full 180 degrees.

Gate Locking System: Gate locking system shall be fabricated in accordance with SK-1 and SK-2* and shall be manufactured by Shannon Gates, Deer Park, NY, or approved equal. SK-1 and SK-2 shall supersede corresponding details in DPR Standard Details (TYLA/146-R7), Sheet No. 31 and 32. The Gate Locking System shall consist of three elements: 1) A steel drop bolt arranged to engage the gate stop. The drop bolt shall have a flange that meets a fixed locking eyelet, welded on the gate, to lock the gate in the open and closed position. 2) A rotating locking mechanism consisting of flanges that can be padlocked together and 3) gate stops. All necessary fittings and gate holders to lock gates in both open and closed positions shall be furnished. All welds shall be ground smooth to a neat finish and shall conform to the requirements given under the "Materials and Methods of Construction", Section B.

Padlock: The Contractor shall furnish one (1) padlock for each single gate and for each leaf of the double gates. The padlocks shall be American No. 5571 as manufactured by American Lock Co. of Crete, Illinois, or approved equal. All padlocks for the same park facility shall be keyed alike, with two (2) inch width by three-quarter (3/4) inch thick brass body, maximum security, five (5) pin tumblers with hardened alloy steel chrome plated shackle no less than three-eighths (3/8) inch diameter and two (2) inch clearance (elongated shackle). The Contractor shall furnish two (2) keys for each padlock.

REINFORCED CONCRETE SLAB: At gates shall be as shown on the standard details and as specified under "Reinforced Concrete Pavement".

Concrete: Concrete shall be 3,200 psi Average Concrete as specified in Section B.

ERECTION: The posts shall be set in holes which shall have been formed in the concrete curb as shown on the plans or directed by the Engineer. Voids for posts shall be formed in the concrete by removable waxed sonotubes or galvanized sheet metal sleeves to remain. Core drilling is not permitted. After the posts have been set in place and properly supported to hold them in line and grade, the resulting space shall be neatly filled with a grout consisting of one (1) part cement and two (2) parts sand or approved equal. All gates and all end, corner and gateposts, regardless of height of fence shall have a 1/2" diameter truss rod and turnbuckle. Rod shall be tied to the mesh every 12 inches on center with tie-wires. Bolts on the turnbuckle shall be tack welded to prevent loosening. The only exception to the above is that truss rods are not required for end, corner and gateposts for fences 4'-0" ht. and under.

Chain link fabric shall be attached to line and corner posts and top, intermediate and bottom rails. Maintain a min. 1" (inch) clearance between finished grade and fence fabric. Posts shall be set plumb and true to line and grade. Any post not set true to line and grade shall be removed and replaced at the Contractor's expense. Bending posts to make them plumb will not be permitted.

The Contractor shall maintain the chain link fences and gates during the life of the contract and shall repair and replace all members that are disturbed, damaged, or destroyed from any cause at no cost to the City.

Bolt and Hardware Installation: Nuts and bolts shall be galvanized but not powder coated. Cans of TGIC-Polyester or PVC touch-up powder coating shall be used to paint the nuts and bolts per manufacturer's recommendations. The ends of all bolts shall be peened after tightening.

Bolts which are installed six feet (6') or less above grade shall not protrude more than 1/4" beyond the nut after tightening. All rough edges resulting from the cutting of bolts to achieve this requirement shall be filed smooth to the satisfaction of the Engineer. All post caps, corner and end fittings, and gate hinges on all fence elevations are to be secured in place with #14 SS drive screws to the satisfaction of the Engineer.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provision, Article 11.

Certification: The Contractor shall submit, at his own expense, a certification from the supplier for the following:

1. All castings are made from malleable iron.
2. All hot-dipped galvanized items have met the ASTM serial designations as indicated in this specification.
3. All powder coating meets the ASTM serial designations as indicated in these specifications.

Shop Drawings: Before the work in the shop is started, the Contractor shall submit shop drawings for approval. Include complete details of fence and gate construction, fence height, post spacing, dimensions and unit weights of framework and concrete footing detail.

Samples: Prior to erection of the fence the following shall be submitted:
Fence framework: One piece of each pipe size, twelve (12") inches long.
Fence Fabric: One piece twelve (12") inches square.

Shipping Lists: The shipping list for the materials furnished shall be endorsed with the manufacturer's voucher certifying that the materials used comply with these specifications.

EXTRA MATERIALS: The Contractor shall furnish (furnish only, not install) extra materials and deliver to D.P.R. Maintenance and Operations division as follows:

10 (Ten) each- powdercoated tension bars 8' (Eight Foot) lengths. ¼" x ¾" galvanized steel for 2" mesh.

25 (Twenty-five)- powder coated tension bands, 1/8" x 1" pressed steel -5 (five) each of the following sizes - 4, 3 ½ , 3, 2 ½ , & 2 inch dia. post band sizes.

1 (One) box of 1,800 (Eighteen-Hundred) – vinyl-clad aluminum ties, 8 ½" length, 3/16" dia. wrought aluminum alloy 1100- H16 wire.

1 (One) each-vinyl-clad aluminum tie coil, 50 (Fifty) pound size, 3/16" dia. wrought aluminum alloy 1100-H16 wire.

1 (one)- Twenty-five foot roll of 4' (four foot) ht., 2" vinyl coated mesh, per this specification.

All Extra Material shall be black.

The above materials shall be delivered to the Sector A.P.R.M. or Borough Foreman of Mechanics (only) and a signed receipt (from M & O) shall be submitted to the Engineer to acknowledge M. & O. receipt of the aforementioned materials. Only one set of extra material as described above shall be required per contract regardless of how many different types of fence or gates, heights of fence or gates, or quantity of fence or gates that are required for this contract.

MEASUREMENT AND PAYMENT: The quantity of **CHAIN LINK FENCE** to be paid for shall be the number of **LINEAR FEET** of each height, furnished and erected complete in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of **CHAIN LINK FENCE** of each height and shall include the cost of all labor, material, equipment and all incidental expenses necessary to complete the work, including powder coating and powder coating touch-up, required to furnish and erect chain link fence with PVC powder coated steel fabric, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

The quantity of **GATES** for chain link fence with PVC powder coated fabric shall be the number of TGIC-Polyester powder coated gates for chain link fence with PVC powder coated steel fabric (including both leaves of two-leaf gates, gate posts, locking system, gate stop and chain link fence over the gates) furnished and erected complete in accordance with the plans, specifications, and directions of the Engineer.

The price bid for PVC powder coated gates shall be a unit price for **EACH GATE** for the height of fence specified and shall include the cost of all labor, material, equipment and all incidental expenses necessary to complete the work, including gate stop, padlocks, powder coating and powder coating touch-up required to furnish and erect gates with PVC powder coated steel fabric, and incidentals, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

The cost of excavation and concrete will be paid for under their respective contract Items. No deductions will be made for openings in fence except where gates occur. The cost for installing portals, as shown on the plans, shall be deemed included in the unit prices bid for these items.

In addition, the Contractor shall deliver **EXTRA MATERIAL** as outlined above to D.P.R. M. & O. Unless otherwise specified, **one** set of extra materials is required per contract, regardless of number of items. No additional payment shall be made for extra materials. Contractor shall include cost in the bid price. Failure to supply **EXTRA MATERIAL** shall result in the City taking a total credit of $1,000.00(OneThousanddollars.)

Rev. 4/20/2012

ITEM NO. 62 CHAIN LINK FENCE 8'-0" HT. FOR BOARDWALK

WORK: Under these Items, the Contractor shall furnish and erect powder coated chain link fences to be installed on the Boardwalk, in accordance with the plans and specifications and directions of the Engineer. In addition, the Contractor shall furnish extra materials to D.P.R. M. & O. as specified under heading EXTRAMATERIAL.

INTENT: It is the intent of these items to effectively enclose the areas shown on the plans at the top of the Boardwalk ramps, and when new fences terminate at existing or new structures or fences within the areas or adjacent to the areas, the clear spaces between the fences and structures shall not exceed three and one half (3 1/2") inches. Closures, if necessary, shall be made by the Contractor in a manner approved by the Engineer. Payment for such closures will be made per linear foot or a fraction thereof, at the unit prices bid for the fences.

MATERIAL: All fittings, hardware and equipment shall be designed to carry one hundred percent (100%) overload.

Malleable iron castings shall be powder coated after hot dipped galvanizing in accordance with ASTM Serial Designation: A153.

Pressed steel fittings and appurtenances shall be powder coated after hot dipped galvanizing in accordance with ASTM Serial Designation: A123.

All fittings, hardware and equipment shall be powder coated of a color to match the framework and shall be of the materials listed in the following schedule:

FENCE/GATE PART	MATERIAL
Boulevards, Corner (Split) Fittings and End Fittings	Malleable Iron or Pressed Steel – 3/16" thick
Post Caps and Post Line Tops	Malleable Iron or Pressed Steel – 3/16" thick
Couplings	Galv. Steel Pipe – 1/8" thick with ¼" thick Dia. Full Depth Rivet
Gate Hinges	Malleable Iron or Pressed Steel – ¼" thick with 1" Dia. Stainless Steel Pin Welded to ½" thick Pin Support
Bolts and Nuts	Galv. Steel or Stainless Steel as indicated on Plans
Tension Bars	¼" x ¾" Galv. Steel for 2" and 1-3/4" Mesh, 3/16" x 3/8" Galv. Flat Steel For 1" Mesh
Tension Bands	1/8" x 1" Pressed Steel

FENCE/GATE PART	MATERIAL
Truss Rods	½" Dia. Galv. Steel
Truss Tightener	3/8" x 1" Galv. Steel
Truss Clamp	¼" Pressed Steel
Gate Locking System	Rotating Locking Mechanism – Galv. Steel Pipe. All other components shall be mild steel
Gate Stop	7/16" thick malleable iron
Drive Pins and Set Screws	Stainless Steel, 18-8

POSTSANDRAILS:TYPEI - Posts and rails shall be standard weight galvanized steel pipe of the sizes shown on the plans and shall conform to ASTM Serial Designation F-1083 Schedule 40, except for chain link fence posts 20'-0" height, which shall be Schedule 80. Posts and rails shall be hot dip galvanized inside and outside in accordance with ASTM Serial Designation F-1083 or:

For fence up to and including ten (10) feet height, posts and rails may be TYPEII, SS-40 steel tubing as manufactured by Allied Tube and Conduit Corp. of Harvey, Illinois, or approved equal. Tubing must conform to ASTM A1011/A1011M, cold rolled steel pipe and coated with a minimum of 0.9 ounces of zinc per square foot, a minimum of 15 micrograms of zinc chromate per square inch. Steel pipe supplied under this option shall be of the same outside diameter as Schedule 40 pipe and achieve minimum yield strength of 50,000 p.s.i.

SURFACECOATINGS: All posts, rails and fittings shall be powder coated with either polyvinyl chloride (PVC) or TGIC-Polyester (with the exception of the turnbuckles and threaded ends of the truss rods, both of which shall be sprayed with powder coat touch-up after installation).

Galvanizing of all components shall provide an acceptable substrate for applied powder coatings. No lacquer, urethane or other coatings which would prevent proper adhesion of powder coating shall be applied to the pipe.

The powder coating shall be applied to the galvanized surfaces in such a manner that the coating will not peel off. Insure surfaces to be coated are clean and dry and free of grease, dust, rust, etc. All galvanized parts, prior to powdercoating, shall first receive phosphating and chromatizing treatments to improve the adhesion of the surface coating. Color to be black unless otherwise indicated on the plans.

The entire fence installation shall be coated with one of the two following types of powder coating, (with the exception of gates, all of which shall be TGIC-Polyester and fabric which shall always be PVC). All Fence components shall be coated on all surfaces, of a color to match the framework. All coated surfaces shall comply with the adhesion specifications listed in ASTM F1043.

TYPE A - PolyvinylChloridePowderCoating: PVC Powder coating shall be applied to the galvanized steel or iron by the fluid bed method to a preheated base which has been cleaned and primed prior to submersion in vinyl, resulting in a firm bond between the PVC and the metal. PVC shall be applied to a film thickness of 10 to 15 mils on framework and fittings, and 7 to 12 mils on fabric without voids, tears or cuts that reveal the substrate and shall thoroughly adhere to the metal without peeling when scratched with a pick device or knife blade point.

TYPE B - TGIC-PolyesterPowderCoating: TGIC-Polyester Powder shall be applied to the galvanized steel or iron in such a manner that the coating will not peel off. The TGIC-Polyester shall be applied at a film thickness of 3 to 6 mils by electrostatic spray process and bake finished per manufacturer's directions. The TGIC-Polyester shall be applied without voids, tears or cuts that reveal the substrate and shall thoroughly adhere to the metal without peeling when scratched with a pick device or knife blade point.

TESTS:

FieldTestforPVCPowderCoating: As per ASTM F668, three sample sections of the PVC powder coated fence shall be tested for bonding of the powder coat to the metal. Each test will consist of making two cuts parallel to the axis of the pipe or fitting, through the coating, appx. 1/16 inch (1.6 mm) apart, at least 1/2 inch (12.7 mm) long. With a knife peel back a section of the coating between 1/8 inch (3.2 mm) and 1/4 inch (6.4 mm) long to produce a tab. Attempt to remove the 1/16 inch strip of coating by pulling the tab. The fence shall be deemed acceptable if the coating breaks rather than separates from the metal on all three samples.

LaboratoryTestforTGIC-PolyesterPowderCoat: At the discretion of the Engineer, a sample of the TGIC-Polyester powder coated fence shall be laboratory tested for bonding of the powder coating to the metal. Test shall be the Cross Hatch test per ASTM D3359, Method B. Failure to satisfactorily pass this test shall be a basis for rejection.

TOUCH-UP&REPAIR: For minor damage caused by installation, transportation, field welding and cutting of metal powder coated surfaces: clean welds, bolted connections, abraded or sawcut areas, then:

1. On welded and cut surfaces, apply organic zinc repair paint complying with ASTM A780, then repair powder coating per number 2 below. Galvanizing repair paint shall have 65 percent zinc by weight. Thickness of repair paint shall be not less than that required by ASTM A123.
2. On damaged powder coated surfaces, touch-up finish in conformance with manufacturer's recommendations. Provide touch-up such that repair is not visible from a distance of six feet (6').

FABRIC: Fabric shall be hot dip galvanized steel wire mesh as per ASTM A641, with a thermallyfused polyvinyl chloride powder coating of 7 to 12 mils thick as per ASTM F668 class 2b. Color to match framework. Fabric shall be produced by methods recognized as good commercial practices. Core wire tensile strength shall be 75,000 psi (517 MPa).

Wire used for the manufacture of fabric shall meet the requirements of ASTM F668 and shall be capable of being woven into fabric without the PVC coating cracking or peeling. PVC coating shall be a dense, impervious covering free of voids. Excessive roughness, bubbles, blisters, bruises and flaking will be a basis for rejection. PVC shall be thermally fused. Bonded or

extruded and glued surface coating will not be permitted. Fabric shall be stretched to provide a smooth, taut, uniform appearance free from sag.

Field Test: PVC coating on fabric shall be field tested for adherence to the metal as outlined elsewhere in this specification.

Thickness of Fabric: One (1) Inch Mesh: Uncoated wire dimension shall be 0.120 inches in diameter (11 gauge). Zinc coating shall be 0.30 ounces per square foot of wire surface.

OneandThreeQuarter(1-3/4)InchandTwo(2)InchMesh: Uncoated wire dimension shall be 0.148 inches in diameter (9 gauge). Zinc coating shall be .3 ounces per square foot of wire surface.

Selvages: Fabric shall be barbed at the top and knuckled at the bottom on fences over 6'-0" high. Fabric on fences 4'-0" and 6'-0" shall be knuckled top and bottom. Loops of knuckled fabric shall be closed or nearly closed. The wire ends of barbed selvages shall be twisted in a closed helix of 1- matching turns and cut at an acute angle. The length of the ends beyond the twist shall be at least 1/4 inch long. One (1) inch mesh shall be knuckled both top and bottom.

TIES: Tie-wire core thickness shall be 9 gauge (0.148") wrought aluminum alloy 1100-H16 wire with an extruded vinyl coating in accordance with ASTM A641 Class 3. PVC shall be applied to a film thickness of 20 to 22 mils. Ties shall be spaced fifteen (15) inches apart on rails and twelve (12) inches apart on posts. The ends of ties shall be wound in a telegraph twist two and one half turns.

Color to match mesh. Contractor shall touch-up PVC coating on ties damaged as result of installation.

GATES: Gates shall be furnished and installed on reinforced concrete slabs where indicated on the plans or directed by the Engineer. All gates shall be galvanized steel and shall be TGIC-Polyester powder coated after fabrication per requirements for fence framework outlined elsewhere in this specification. Welded joints shall have a suitable rust preventive coating applied to the welds prior to powder coating. Gate fabric shall match line fabric adjacent to gate opening. Gates shall be installed plumb, level and secure for full opening without interference. The hinges shall be so designed to permit the gate to swing a full 180 degrees.

GateLockingSystem: Gate locking system shall be fabricated in accordance with SK-1 and SK-2* and shall be manufactured by Shannon Gates, Deer Park, NY, or approved equal. SK-1 and SK-2 shall supersede corresponding details in DPR Standard Details (TYLA/146-R7), Sheet No. 31 and 32. The Gate Locking System shall consist of three elements: 1) A steel drop bolt arranged to engage the gate stop. The drop bolt shall have a flange that meets a fixed locking eyelet, welded on the gate, to lock the gate in the open and closed position. 2) A rotating locking mechanism consisting of flanges that can be padlocked together and 3) gate stops. All necessary fittings and gate holders to lock gates in both open and closed positions shall be furnished. All welds shall be ground smooth to a neat finish and shall conform to the requirements given under the "Materials and Methods of Construction", Section B.

Padlock: The Contractor shall furnish one (1) padlock for each single gate and for each leaf of the double gates. The padlocks shall be American No. 5571 as manufactured by American Lock Co. of Crete, Illinois, or approved equal. All padlocks for the same park facility shall be keyed alike, with two (2) inch width by three-quarter (3/4) inch thick brass body, maximum security, five (5) pin tumblers with hardened alloy steel chrome plated shackle no less than three-eighths (3/8) inch diameter and two (2) inch clearance (elongated shackle). The Contractor shall furnish two (2) keys for each padlock.

REINFORCED CONCRETE SLAB: At gates shall be as shown on the standard details and as specified under "Reinforced Concrete Pavement".

Concrete: Concrete shall be 3,200 psi Average Concrete as specified in Section B.

ERECTION: The posts shall be set in holes which shall have been formed in the concrete curb as shown on the plans or directed by the Engineer. Voids for posts shall be formed in the concrete by removable waxed sonotubes or galvanized sheet metal sleeves to remain. Core drillingisnotpermitted. After the posts have been set in place and properly supported to hold them in line and grade, the resulting space shall be neatly filled with a grout consisting of one (1) part cement and two (2) parts sand or approved equal. All gates and all end, corner and gateposts, regardless of height of fence shall have a 1/2" diameter truss rod and turnbuckle. Rod shall be tied to the mesh every 12 inches on center with tie-wires. Bolts on the turnbuckle shall be tack Welded to prevent loosening. The only exception to the above is that truss rods are not required for end, corner and gateposts for fences 4'-0" ht. and under.

Chain link fabric shall be attached to line and corner posts and top, intermediate and bottom rails. Maintain a min. 1" (inch) clearance between finished grade and fence fabric. Posts shall be set plumb and true to line and grade. Any post not set true to line and grade shall be removed and replaced at the Contractor's expense. Bending posts to make them plumb will not be permitted.

The Contractor shall maintain the chain link fences and gates during the life of the contract and shall repair and replace all members that are disturbed, damaged, or destroyed from any cause at no cost to the City.

BoltandHardwareInstallation: Nuts and bolts shall be galvanized but not powder coated. Cans of TGIC-Polyester or PVC touch-up powder coating shall be used to paint the nuts and bolts per manufacturer's recommendations. The ends of all bolts shall be peened after tightening.

Bolts which are installed six feet (6') or less above grade shall not protrude more than 1/4" beyond the nut after tightening. All rough edges resulting from the cutting of bolts to achieve this requirement shall be filed smooth to the satisfaction of the Engineer. All post caps, corner and end fittings, and gate hinges on all fence elevations are to be secured in place with #14 SS drive screws to the satisfaction of the Engineer.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provision, Article 11.

Certification: The Contractor shall submit, at his own expense, a certification from the supplier for the following:

1. All castings are made from malleable iron.
2. All hot-dipped galvanized items have met the ASTM serial designations as indicated in this specification.
3. All powder coating meets the ASTM serial designations as indicated in these specifications.

ShopDrawings: Before the work in the shop is started, the Contractor shall submit shop drawings for approval. Include complete details of fence and gate construction, fence height, post spacing, dimensions and unit weights of framework and concrete footing detail.

Samples: Prior to erection of the fence the following shall be submitted:
Fence framework: One piece of each pipe size, twelve (12") inches long.
Fence Fabric: One piece twelve (12") inches square.

ShippingLists: The shipping list for the materials furnished shall be endorsed with the manufacturer's voucher certifying that the materials used comply with these specifications.

EXTRA MATERIALS: The Contractor shall furnish (furnish only, not install) extra materials and deliver to D.P.R. Maintenance and Operations division as follows:

10 (Ten) each- powdercoated tension bars 8' (Eight Foot) lengths. ¼" x ¾" galvanized steel for 2" mesh.

25 (Twenty-five)- powder coated tension bands, 1/8" x 1" pressed steel -5 (five) each of the following sizes - 4, 3 ½ , 3, 2 ½ , & 2 inch dia. post band sizes.

1 (One) box of 1,800 (Eighteen-Hundred) – vinyl-clad aluminum ties, 8 ½" length, 3/16" dia. wrought aluminum alloy 1100- H16 wire.

1 (One) each-vinyl-clad aluminum tie coil, 50 (Fifty) pound size, 3/16" dia. wrought aluminum alloy 1100-H16 wire.

1 (one)- Twenty-five foot roll of 4' (four foot) ht., 2" vinyl coated mesh, per this specification.

All Extra Material shall be black.

The above materials shall be delivered to the Sector A.P.R.M. or Borough Foreman of Mechanics (only) and a signed receipt (from M & O) shall be submitted to the Engineer to acknowledge M. & O. receipt of the aforementioned materials. Only one set of extra material as described above shall be required per contract regardless of how many different types of fence or gates, heights of fence or gates, or quantity of fence or gates that are required for this contract.

MEASUREMENT AND PAYMENT: The quantity of **CHAIN LINK FENCE 8'-0" HT. FOR BOARDWALK** to be paid for shall be the number of **LINEAR FEET** of each height, furnished and erected complete in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of **CHAIN LINK FENCE 8'-0" HT. FOR BOARDWALK** of each height and shall include the cost of all labor, material, equipment and all incidental expenses necessary to complete the work, including powder coating and powder coating touch-up, required to furnish and erect chain link fence with PVC powder coated steel fabric, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

The quantity of **GATES** for chain link fence with PVC powder coated fabric shall be the number of TGIC-Polyester powder coated gates for chain link fence with PVC powder coated steel fabric (including both leaves of two-leaf gates, gate posts, locking system, gate stop and chain link fence over the gates) furnished and erected complete in accordance with the plans, specifications, and directions of the Engineer.

The price bid for PVC powder coated gates shall be a unit price for **EACH GATE** for the height of fence specified and shall include the cost of all labor, material, equipment and all incidental expenses necessary to complete the work, including gate stop, padlocks, powder coating and powder coating touch-up required to furnish and erect gates with PVC powder coated steel fabric, and incidentals, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

The cost of excavation and concrete will be paid for under their respective contract Items. No deductions will be made for openings in fence except where gates occur. The cost for installing portals, as shown on the plans, shall be deemed included in the unit prices bid for these items.

In addition, the Contractor shall deliver **EXTRA MATERIAL** as outlined above to D.P.R. M. & O. Unless otherwise specified, **one** set of extra materials is required per contract, regardless of number of items. No additional payment shall be made for extra materials. Contractor shall include cost in the bid price. Failure to supply **EXTRA MATERIAL** shall result in the City taking a total credit of $1,000.00(OneThousanddollars.)

ENDOFPAGE

NonStd 12/18/12

ITEM NO. 63 CHAIN LINK FENCE 8'-0" HT. FOR TOP OF DEP OUTFALLS

WORK: Under these Items, the Contractor shall furnish and erect powder coated chain link fences to be installed at the concrete storm sewer outfall structures, in accordance with the plans and specifications and directions of the Engineer. In addition, the Contractor shall furnish extra materials to D.P.R. M. & O. as specified under heading EXTRAMATERIAL.

INTENT: It is the intent of these items to effectively enclose the areas shown on the plans at the concrete storm sewer outfall structures, and when new fences terminate at existing or new structures or fences within the areas or adjacent to the areas, the clear spaces between the fences and structures shall not exceed three and one half (3 1/2") inches. Closures, if necessary, shall be made by the Contractor in a manner approved by the Engineer. Payment for such closures will be made per linear foot or a fraction thereof, at the unit prices bid for the fences.

MATERIAL: All fittings, hardware and equipment shall be designed to carry one hundred percent (100%) overload.

Malleable iron castings shall be powder coated after hot dipped galvanizing in accordance with ASTM Serial Designation: A153.

Pressed steel fittings and appurtenances shall be powder coated after hot dipped galvanizing in accordance with ASTM Serial Designation: A123.

All fittings, hardware and equipment shall be powder coated of a color to match the framework and shall be of the materials listed in the following schedule:

FENCE/GATE PART	MATERIAL
Boulevards, Corner (Split) Fittings and End Fittings	Malleable Iron or Pressed Steel – 3/16" thick
Post Caps and Post Line Tops	Malleable Iron or Pressed Steel – 3/16" thick
Couplings	Galv. Steel Pipe – 1/8" thick with ¼" thick Dia. Full Depth Rivet
Gate Hinges	Malleable Iron or Pressed Steel – ¼" thick with 1" Dia. Stainless Steel Pin Welded to ½" thick Pin Support
Bolts and Nuts	Galv. Steel or Stainless Steel as indicated on Plans
Tension Bars	¼" x ¾" Galv. Steel for 2" and 1-3/4" Mesh, 3/16" x 3/8" Galv. Flat Steel For 1" Mesh
Tension Bands	1/8" x 1" Pressed Steel

FENCE/GATE PART	MATERIAL
Truss Rods	½" Dia. Galv. Steel
Truss Tightener	3/8" x 1" Galv. Steel
Truss Clamp	¼" Pressed Steel
Gate Locking System	Rotating Locking Mechanism – Galv. Steel Pipe. All other components shall be mild steel
Gate Stop	7/16" thick malleable iron
Drive Pins and Set Screws	Stainless Steel, 18-8

POSTSANDRAILS:TYPEI - Posts and rails shall be standard weight galvanized steel pipe of the sizes shown on the plans and shall conform to ASTM Serial Designation F-1083 Schedule
40, except for chain link fence posts 20'-0" height, which shall be Schedule 80. Posts and rails shall be hot dip galvanized inside and outside in accordance with ASTM Serial Designation F-
1083 or:

For fence up to and including ten (10) feet height, posts and rails may be TYPEII, SS-40 steel tubing as manufactured by Allied Tube and Conduit Corp. of Harvey, Illinois, or approved equal. Tubing must conform to ASTM A1011/A1011M, cold rolled steel pipe and coated with a minimum of 0.9 ounces of zinc per square foot, a minimum of 15 micrograms of zinc chromate per square inch. Steel pipe supplied under this option shall be of the same outside diameter as Schedule 40 pipe and achieve minimum yield strength of 50,000 p.s.i.

SURFACECOATINGS: All posts, rails and fittings shall be powder coated with either polyvinyl chloride (PVC) or TGIC-Polyester (with the exception of the turnbuckles and threaded ends of
the truss rods, both of which shall be sprayed with powder coat touch-up after installation).

Galvanizing of all components shall provide an acceptable substrate for applied powder coatings. No lacquer, urethane or other coatings which would prevent proper adhesion of powder coating shall be applied to the pipe.

The powder coating shall be applied to the galvanized surfaces in such a manner that the coating will not peel off. Insure surfaces to be coated are clean and dry and free of grease, dust, rust, etc. All galvanized parts, prior to powdercoating, shall first receive phosphating and chromatizing treatments to improve the adhesion of the surface coating. Color to be black unless otherwise indicated on the plans.

The entire fence installation shall be coated with one of the two following types of powder coating, (with the exception of gates, all of which shall be TGIC-Polyester and fabric which shall always be PVC). All Fence components shall be coated on all surfaces, of a color to match the framework. All coated surfaces shall comply with the adhesion specifications listed in ASTM F1043.

TYPE A - PolyvinylChloridePowderCoating: PVC Powder coating shall be applied to the galvanized steel or iron by the fluid bed method to a preheated base which has been cleaned and primed prior to submersion in vinyl, resulting in a firm bond between the PVC and the metal. PVC shall be applied to a film thickness of 10 to 15 mils on framework and fittings, and 7 to 12 mils on fabric without voids, tears or cuts that reveal the substrate and shall thoroughly adhere to the metal without peeling when scratched with a pick device or knife blade point.

TYPE B - TGIC-PolyesterPowderCoating: TGIC-Polyester Powder shall be applied to the galvanized steel or iron in such a manner that the coating will not peel off. The TGIC-Polyester shall be applied at a film thickness of 3 to 6 mils by electrostatic spray process and bake finished per manufacturer's directions. The TGIC-Polyester shall be applied without voids, tears or cuts that reveal the substrate and shall thoroughly adhere to the metal without peeling when scratched with a pick device or knife blade point.

TESTS:

FieldTestforPVCPowderCoating: As per ASTM F668, three sample sections of the PVC powder coated fence shall be tested for bonding of the powder coat to the metal. Each test will consist of making two cuts parallel to the axis of the pipe or fitting, through the coating, appx. 1/16 inch (1.6 mm) apart, at least 1/2 inch (12.7 mm) long. With a knife peel back a section of the coating between 1/8 inch (3.2 mm) and 1/4 inch (6.4 mm) long to produce a tab. Attempt to remove the 1/16 inch strip of coating by pulling the tab. The fence shall be deemed acceptable if the coating breaks rather than separates from the metal on all three samples.

LaboratoryTestforTGIC-PolyesterPowderCoat: At the discretion of the Engineer, a sample of the TGIC-Polyester powder coated fence shall be laboratory tested for bonding of the powder coating to the metal. Test shall be the Cross Hatch test per ASTM D3359, Method B. Failure to satisfactorily pass this test shall be a basis for rejection.

TOUCH-UP&REPAIR: For minor damage caused by installation, transportation, field welding and cutting of metal powder coated surfaces: clean welds, bolted connections, abraded or sawcut areas, then:

1. On welded and cut surfaces, apply organic zinc repair paint complying with ASTM A780, then repair powder coating per number 2 below. Galvanizing repair paint shall have 65 percent zinc by weight. Thickness of repair paint shall be not less than that required by ASTM A123.
2. On damaged powder coated surfaces, touch-up finish in conformance with manufacturer's recommendations. Provide touch-up such that repair is not visible from a distance of six feet (6').

FABRIC: Fabric shall be hot dip galvanized steel wire mesh as per ASTM A641, with a thermallyfused polyvinyl chloride powder coating of 7 to 12 mils thick as per ASTM F668 class 2b. Color to match framework. Fabric shall be produced by methods recognized as good commercial practices. Core wire tensile strength shall be 75,000 psi (517 MPa).

Wire used for the manufacture of fabric shall meet the requirements of ASTM F668 and shall be capable of being woven into fabric without the PVC coating cracking or peeling. PVC coating shall be a dense, impervious covering free of voids. Excessive roughness, bubbles, blisters, bruises and flaking will be a basis for rejection. PVC shall be thermally fused. Bonded or extruded and glued surface coating will not be permitted. Fabric shall be stretched to provide a smooth, taut, uniform appearance free from sag.

Field Test: PVC coating on fabric shall be field tested for adherence to the metal as outlined elsewhere in this specification.

Thickness of Fabric: One (1) Inch Mesh: Uncoated wire dimension shall be 0.120 inches in diameter (11 gauge). Zinc coating shall be 0.30 ounces per square foot of wire surface.

OneandThreeQuarter(1-3/4)InchandTwo(2)InchMesh: Uncoated wire dimension shall be 0.148 inches in diameter (9 gauge). Zinc coating shall be .3 ounces per square foot of wire surface.

Selvages: Fabric shall be barbed at the top and knuckled at the bottom on fences over 6'-0" high. Fabric on fences 4'-0" and 6'-0" shall be knuckled top and bottom. Loops of knuckled fabric shall be closed or nearly closed. The wire ends of barbed selvages shall be twisted in a closed helix of 1- matching turns and cut at an acute angle. The length of the ends beyond the twist shall be at least 1/4 inch long. One (1) inch mesh shall be knuckled both top and bottom.

TIES: Tie-wire core thickness shall be 9 gauge (0.148") wrought aluminum alloy 1100-H16 wire with an extruded vinyl coating in accordance with ASTM A641 Class 3. PVC shall be applied to a film thickness of 20 to 22 mils. Ties shall be spaced fifteen (15) inches apart on rails and twelve (12) inches apart on posts. The ends of ties shall be wound in a telegraph twist two and one half turns.

Color to match mesh. Contractor shall touch-up PVC coating on ties damaged as result of installation.

GATES: Gates shall be furnished and installed on reinforced concrete slabs where indicated on the plans or directed by the Engineer. All gates shall be galvanized steel and shall be TGIC-Polyester powder coated after fabrication per requirements for fence framework outlined elsewhere in this specification. Welded joints shall have a suitable rust preventive coating applied to the welds prior to powder coating. Gate fabric shall match line fabric adjacent to gate opening. Gates shall be installed plumb, level and secure for full opening without interference. The hinges shall be so designed to permit the gate to swing a full 180 degrees.

GateLockingSystem: Gate locking system shall be fabricated in accordance with SK-1 and SK-2* and shall be manufactured by Shannon Gates, Deer Park, NY, or approved equal. SK-1 and SK-2 shall supersede corresponding details in DPR Standard Details (TYLA/146-R7), Sheet No. 31 and 32. The Gate Locking System shall consist of three elements: 1) A steel drop bolt arranged to engage the gate stop. The drop bolt shall have a flange that meets a fixed locking eyelet, welded on the gate, to lock the gate in the open and closed position. 2) A rotating locking mechanism consisting of flanges that can be padlocked together and 3) gate stops. All necessary fittings and gate holders to lock gates in both open and closed positions shall be furnished. All welds shall be ground smooth to a neat finish and shall conform to the requirements given under the "Materials and Methods of Construction", Section B.

Padlock: The Contractor shall furnish one (1) padlock for each single gate and for each leaf of the double gates. The padlocks shall be American No. 5571 as manufactured by American Lock Co. of Crete, Illinois, or approved equal.

All padlocks for the same park facility shall be keyed alike, with two (2) inch width by three-quarter (3/4) inch thick brass body, maximum security, five (5) pin tumblers with hardened alloy steel chrome plated shackle no less than three-eighths (3/8) inch diameter and two (2) inch clearance (elongated shackle). The Contractor shall furnish two (2) keys for each padlock.

REINFORCED CONCRETE SLAB: At gates shall be as shown on the standard details and as specified under "Reinforced Concrete Pavement".

Concrete: Concrete shall be 3,200 psi Average Concrete as specified in Section B.

ERECTION: The posts shall be set in holes which shall have been formed in the concrete curb as shown on the plans or directed by the Engineer. Voids for posts shall be formed in the concrete by removable waxed sonotubes or galvanized sheet metal sleeves to remain. Core drillingisnotpermitted. After the posts have been set in place and properly supported to hold them in line and grade, the resulting space shall be neatly filled with a grout consisting of one (1) part cement and two (2) parts sand or approved equal. All gates and all end, corner and gateposts, regardless of height of fence shall have a 1/2" diameter truss rod and turnbuckle. Rod shall be tied to the mesh every 12 inches on center with tie-wires. Bolts on the turnbuckle shall be tack welded to prevent loosening. The only exception to the above is that truss rods are not required for end, corner and gateposts for fences 4'-0" ht. and under.

Chain link fabric shall be attached to line and corner posts and top, intermediate and bottom rails. Maintain a min. 1" (inch) clearance between finished grade and fence fabric. Posts shall be set plumb and true to line and grade. Any post not set true to line and grade shall be removed and replaced at the Contractor's expense. Bending posts to make them plumb will not be permitted.

The Contractor shall maintain the chain link fences and gates during the life of the contract and shall repair and replace all members that are disturbed, damaged, or destroyed from any cause at no cost to the City.

BoltandHardwareInstallation: Nuts and bolts shall be galvanized but not powder coated. Cans of TGIC-Polyester or PVC touch-up powder coating shall be used to paint the nuts and bolts per manufacturer's recommendations. The ends of all bolts shall be peened after tightening.

Bolts which are installed six feet (6') or less above grade shall not protrude more than 1/4" beyond the nut after tightening. All rough edges resulting from the cutting of bolts to achieve this requirement shall be filed smooth to the satisfaction of the Engineer. All post caps, corner and end fittings, and gate hinges on all fence elevations are to be secured in place with #14 SS drive screws to the satisfaction of the Engineer.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provision, Article 11.

Certification: The Contractor shall submit, at his own expense, a certification from the supplier for the following:

1. All castings are made from malleable iron.
2. All hot-dipped galvanized items have met the ASTM serial designations as indicated in this specification.
3. All powder coating meets the ASTM serial designations as indicated in these specifications.

ShopDrawings: Before the work in the shop is started, the Contractor shall submit shop drawings for approval. Include complete details of fence and gate construction, fence height, post spacing, dimensions and unit weights of framework and concrete footing detail.

Samples: Prior to erection of the fence the following shall be submitted:
Fence framework: One piece of each pipe size, twelve (12") inches long.
Fence Fabric: One piece twelve (12") inches square.

ShippingLists: The shipping list for the materials furnished shall be endorsed with the manufacturer's voucher certifying that the materials used comply with these specifications.

EXTRA MATERIALS: The Contractor shall furnish (furnish only, not install) extra materials and deliver to D.P.R. Maintenance and Operations division as follows:

10 (Ten) each- powdercoated tension bars 8' (Eight Foot) lengths. ¼" x ¾" galvanized steel for 2" mesh.

25 (Twenty-five)- powder coated tension bands, 1/8" x 1" pressed steel -5 (five) each of the following sizes - 4, 3 ½ , 3, 2 ½ , & 2 inch dia. post band sizes.

1 (One) box of 1,800 (Eighteen-Hundred) – vinyl-clad aluminum ties, 8 ½" length, 3/16" dia. wrought aluminum alloy 1100- H16 wire.

1 (One) each-vinyl-clad aluminum tie coil, 50 (Fifty) pound size, 3/16" dia. wrought aluminum alloy 1100-H16 wire.

1 (one)- Twenty-five foot roll of 4' (four foot) ht., 2" vinyl coated mesh, per this specification.

All Extra Material shall be black.

The above materials shall be delivered to the Sector A.P.R.M. or Borough Foreman of Mechanics (only) and a signed receipt (from M & O) shall be submitted to the Engineer to acknowledge M. & O. receipt of the aforementioned materials. Only one set of extra material as described above shall be required per contract regardless of how many different types of fence or gates, heights of fence or gates, or quantity of fence or gates that are required for this contract.

MEASUREMENT AND PAYMENT: The quantity of **CHAIN LINK FENCE 8'-0" HT. FOR TOP OF DEP OUTFALLS** to be paid for shall be the number of **LINEAR FEET** of each height, furnished and erected complete in accordance with the plans, specifications and directions of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of **CHAIN LINK FENCE 8'-0" HT. FOR TOP OF DEP OUTFALLS** of each height and shall include the cost of all labor, material, equipment and all incidental expenses necessary to complete the work, including powder coating and powder coating touch-up, required to furnish and erect chain link fence with PVC powder coated steel fabric, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

The quantity of **GATES** for chain link fence with PVC powder coated fabric shall be the number of TGIC-Polyester powder coated gates for chain link fence with PVC powder coated steel fabric (including both leaves of two-leaf gates, gate posts, locking system, gate stop and chain link fence over the gates) furnished and erected complete in accordance with the plans, specifications, and directions of the Engineer.

The price bid for PVC powder coated gates shall be a unit price for **EACH GATE** for the height of fence specified and shall include the cost of all labor, material, equipment and all incidental expenses necessary to complete the work, including gate stop, padlocks, powder coating and powder coating touch-up required to furnish and erect gates with PVC powder coated steel fabric, and incidentals, all in accordance with the plans and specifications, to the satisfaction of the Engineer.

The cost of excavation and concrete will be paid for under their respective contract Items. No deductions will be made for openings in fence except where gates occur. The cost for installing portals, as shown on the plans, shall be deemed included in the unit prices bid for these items.

In addition, the Contractor shall deliver **EXTRA MATERIAL** as outlined above to D.P.R. M. & O. Unless otherwise specified, **one** set of extra materials is required per contract, regardless of number of items. No additional payment shall be made for extra materials. Contractor shall include cost in the bid price. Failure to supply **EXTRA MATERIAL** shall result in the City taking a total credit of $1,000.00(OneThousanddollars.)

ENDOFPAGE

NonStd 12/18/12

ITEM NO. 64 GALVANIZED STEEL BEAM GUIDE RAIL

WORK: Under these items, the Contractor shall furnish and install corrugated beam type guide railing in accordance with the plans, specifications and directions of the Engineer.

MATERIALS:

GuideRail shall be "W" beam type, corrugated 13'-6" in length with post bolt slots and splice bolt slots of the sizes and locations as shown in the drawings. Posts shall be standard weight, 5'-6" in length, size and locations of bolt slots as shown in the details.

The minimum yield point and elongation of the steel shall be 50,000 psi and 22% in two (2") inch gauge length respectively.

All rails shall be made from open hearth or electric furnace No. 12 gauge (nominal thickness 0.105 inches - 0.009 inch tolerance) or heavier steel plates.

The finished beam shall be shaped so that it is not less than twelve inches (12") wide and three inches (3") deep. The manufacturer's tolerance for width and depth shall be minus one-eighth (1/8 inch). The edges of the beam shall be smooth as erected.

The beams shall be blanked to the proper shape, punched, drilled and fabricated and delivered to the designated area ready for assembly. Additional punching, drilling, cutting or welding should not be necessary. Beams and posts shall be straight and uniform in section. Warped or deformed rail or post elements will be rejected.

Where galvanized guiderail is shown on the plan, the rails, posts, end sections and all hardware shall be galvanized in accordance with Type I (A.S.T.M. A123). Beams shall be blanked to the proper shape, fabricated and ready for assembly before galvanizing. No punching, drilling, cutting or welding will be permitted after galvanizing. When galvanizing in accordance with Type IV (A.S.T.M. A525) (Hot Dip Process) is used, the beam may be fabricated, cut, punched or drilled from galvanized sheet or coil stock. The exposed edges resulting from this process do not have to be repaired or touched up in any way.

All bolts, nuts, and washers shall be galvanized by the hot dip process to conform to A.S.T.M. specifications A-153 and shall be designed to develop the required joint strength. The heads of splice bolts shall be shallow, button-type, neatly rounded to provide the minimum obstruction.

Bolts, nuts and washers for post, offset beam, and mounting bracket connections to be galvanized steel and shall conform to ASTM A325.

Details: Materials shall conform to Guide Rail Standard Details.

SHOP DRAWINGS: Shop drawings shall be submitted in accordance with General Conditions,

Section C, Special Provisions, Article 11. No installation work shall begin until approval has been obtained. Drawings shall show the spacing of posts, all necessary marking and dimensioning, and the details of fabrication and geometry of the special rail elements.

The Contractor shall be responsible for the proper fit of all components and completed installations.

SITE PREPARATION: The area shall be cleaned and grubbed of all weeds and plant material under six (6") inches in caliper only as necessary to install the new work, (unless specified and paid for under another item). Wherever possible, trees are to remain. If the D.P.R. resident determines that plant material over 6" in caliper must be removed, the Contractor will be paid for this work under a separate item. If mounds of trash or dumped debris are present, the Contractor will only be required to remove whatever is necessary for implementation of new work, (unless specified and paid for elsewhere). Precautions shall be taken by the Contractor that all existing utilities and structures are safeguarded against injury. Any damage incurred shall be made good by the Contractor at no cost to the City.

ERECTION: Posts shall be set as shown on the plans or ordered by the Engineer, true to line and grade. The sections shall be erected in such a manner as to produce a smooth, continuous rail with the top about 27 inches above finished grade. Lap splices shall be lapped in the direction of traffic. Bolts shall be drawn tight and shall extend 1/4 to 1/2 inch beyond the nuts unless otherwise permitted.

The beams shall be spliced at or near each post by lapping or by butt joints with suitable splice plates allowing for one-eighth inch (1/8") change in dimension. Supporting posts shall be spaced not greater than twelve feet-six inches (12'-6") center to center. The splice plates shall make contact with the beams throughout the spliced area. Bolt holes in the beam at the post bolt and elsewhere as necessary shall be enlarged or slotted to permit expansion and contraction and to facilitate erection.

Posts shall be driven vertically plumb to the required depth in such manner and by such means as to insure no damage to the galvanized or weathering coating material.

Water jetting in driving posts will not be permitted. The driving shall be accomplished with approved equipment and methods that will leave the posts in their final position, free of any distortion, burring or other damage. When posts are driven through asphalt concrete or a bituminous treated material, the Contractor shall take care to prevent damage to the paved or treated areas. Any voids caused by driving the posts shall be filled and compacted with bituminous material as approved by the Engineer.

Terminal Sections: Each end of every beam rail installation shall be fitted with an end section in the manner indicated on the plans. Each end section shall be made of the same material as that used in the construction of the beam rail. Where terminal section is not specified in plans, a single buffer end section shall be used.

ConcreteAnchor/AnchorageUnit: Shall be installed only as required by New York City Department of Transportation - see plans.

RESTORATION: Upon completion of the installation of the guide rail system components, the Contractor shall restore the area to the original state in which he found it. This may require the Contractor to repave, reseed and mulch all areas disturbed by his men and equipment, including the areas adjacent to the anchor unit installation. Seed shall be Perennial Ryegrass, unless otherwise directed by the Engineer.

MEASUREMENT AND PAYMENT: The quantity of guide railing of each type to be paid for under this item shall be the number of **LINEAR FEET** measured along the axis of the railing, from end of end cover to end of end cover, furnished and installed in accordance with the plans and specifications and directions of the Engineer.

Terminal sections of various kinds, as required by the plans and approved by New York City Department of Transportation, shall be included in the linear foot price.

The prices bid shall be a unit price per **LINEAR FOOT** of guide railing of each type, and shall include the cost of all labor, materials, equipment and incidentals necessary to complete the work including site restoration, minor pavement restoration, hardware splice plates and other incidental work necessary or required to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer except concrete anchor, if necessary, will be paid separately. (Anchorage unit, steel rail and posts are considered part of the linear foot price for this item.)

END OF PAGE

Rev. 5/10/2010

ITEM NO. 65 **FIXED WOOD BOLLARD**

WORK: Under this item, the Contractor shall furnish and erect **FIXED WOOD BOLLARD** in accordance with the plans, specifications and directions of the Engineer.

MATERIALS: All wood bollards shall be manufactured of well-seasoned Southern Pine No. 1 timbers structural grade no.1SR per ASTM D-245 as graded by the Southern Pine Inspection Bureau (SPIB), conforming to the American Softwood Lumber Standards and as defined in paragraph 402 of the SPIB grading rules, 1977 edition. Also acceptable is No. 1 Douglas Fir Timbers in accordance with the grading rules for Western Lumber as described in paragraph 70.11 of the July, 1974 edition. Incising is not required and shall not be permitted if Southern Pine is to be used but is required for Douglas Fir Timbers. Wood bollards shall be manufactured by MCM Forest Products, Hoboken, NJ, or approved equal.

The wood shall be further sorted by the Manufacturer to meet the following requirements:

1. Knots - no knots on edges or ends allowed
2. Holes - not allowed
3. Ring shake - not allowed
4. Warp (bow, cup, crook and twist) - see SPIB paragraph No. 752. Warp to be restricted to the "light" category under Paragraph No. 752.
5. Splits and checks - shall not exceed 3/8" in width nor more than one-half the length and thickness of the timber while under our one (1) year guarantee.
6. Grain deviation - grain shall not deviate more than 1 in 15.
7. Wane and Bark inclusions - not allowed
8. Decay - not allowed

Aluminum Reflective Panel: Shall be yellow in color as manufactured by Emedco, Williamsville, N.Y. (cat. # RSO-38y), or approved equal.

Hardware: Screws shall be #14 - 2" length stainless steel tamper resistant screws.

Broken Stone: Each bollard shall be supported by a foundation of bagged stone as shown on the standard detail. Recycled concrete (3/4)-inch blend in a burlap bag is acceptable.

PERSERVATIVE TREATMENT: Wood shall be seasoned, either by air-drying or kiln drying, and the moisture content prior to treatment shall be not more than 25%. Wood shall be treated to a net retention of .40 pounds per cubic foot with ACQ (ammoniacal copper quatenary), Copper Azole preservation, or approved equal. The preservative shall penetrate 2.5 inches or 85% of the sapwood. All details of treatment methods, quality, control and product testing shall be in accordance with the appropriate AWPA standards. In accordance with New York State law, Bills A102 and S7167, CCA (chromated copper arsenate) is prohibited as a wood preservative treatment material.

If any other preservative treatment is proposed, the Contractor shall submit documentation that such treatment conforms to the AWPA Standards for treatment of the wood for the intended use.

INSTALLATION: The bollards shall be installed in accordance with the standard detail and square and plumb at the required locations and finished position as shown on the plans. If bollard is not set true to line and grade it shall be removed and replaced at the Contractor's expense. Contractor shall backfill surrounding area to provide positive drainage and in accordance with the contract plans.

The yellow reflective panels shall be installed, one on each side of bollard, plumb, as shown on the standard detail using stainless steel screws.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

WOOD TREATMENT AFFADIVIT: The contractor shall provide, at his own expense, a sworn affidavit that the type, grade and quality of preservative treatment provided and the net final retention in pounds per cubic foot of wood impregnated, all conforms to the requirements of the specifications.

SHOP DRAWINGS: Shop drawings shall be submitted for approval. Shop drawings will not be required if bollards are fabricated in strict accordance with the Standard Detail.

MEASUREMENT AND PAYMENT: For performing the work to furnish and install **FIXED WOOD BOLLARD** in accordance with the plans, specifications and at the direction of the Engineer, the Contractor shall receive the unit price bid.

The price bid shall be a unit price for **EACH FIXED WOOD BOLLARD** and shall include the cost of furnishing all labor, materials and equipment including excavation, bagged stone, backfilling reflective panels, all hardware and any incidentals necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

END OF PAGE

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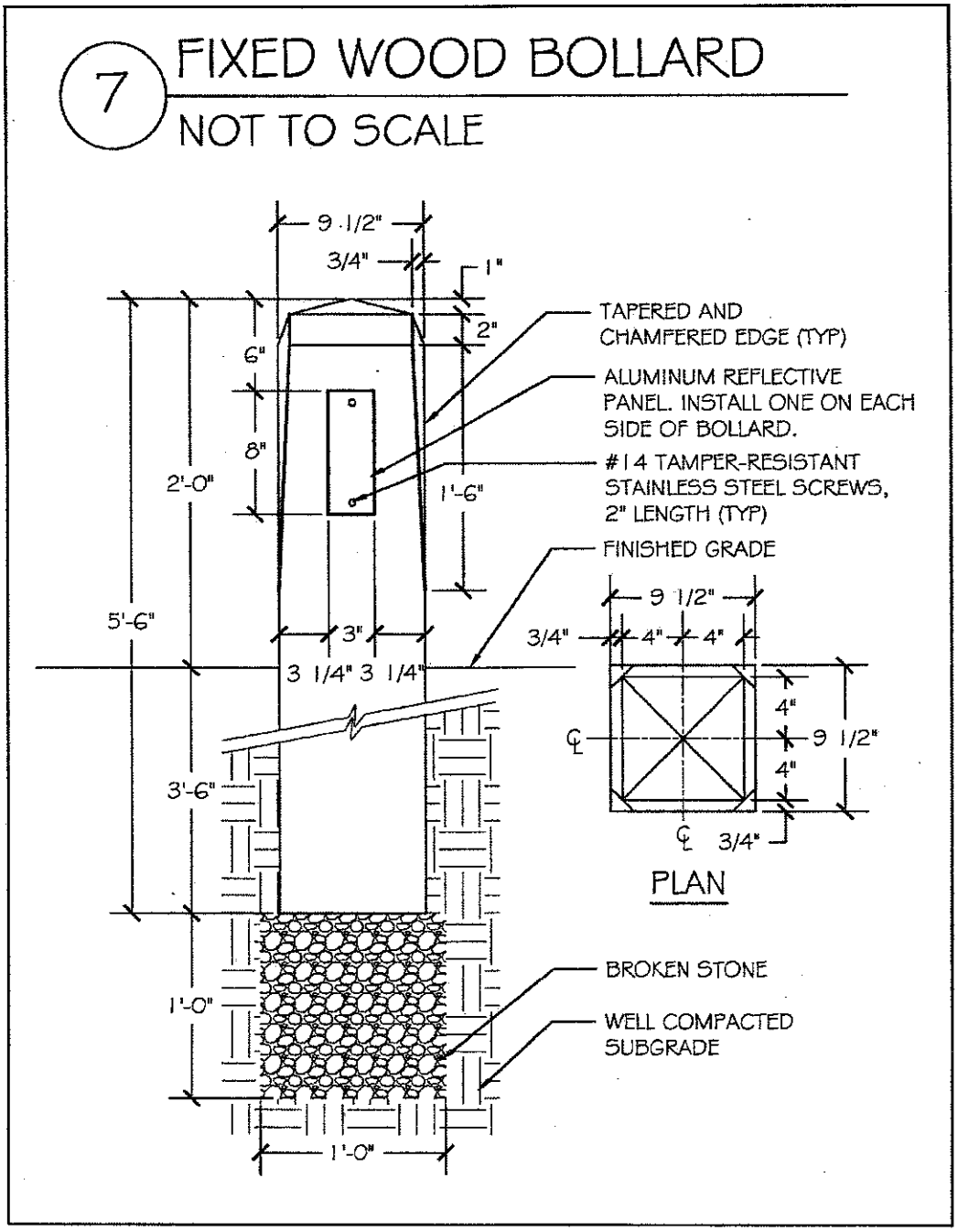
SKETCH OF FIXED WOOD BOLLARD



ITEM NO. 66	**REMOVE & RESET TIMBER BARRIER RAILS**
ITEM NO. 67	**TIMBER BARRIER RAIL TWO RAIL (TYPE A)**
ITEM NO. 68	**TIMBER BARRIER RAIL ONE RAIL (TYPE B)**
ITEM NO. 69	**TIMBER BARRIER RAIL ONE RAIL (TYPE C)**

WORK: Under these items, the Contractor shall remove and reset all types of barrier rails damaged by the storm and furnish and erect timber barrier railing, where barrier rails are missing in accordance with the plans and specifications and directions of the Engineer. The work under these items includes necessary excavation and backfill. Unless otherwise indicated, the barrier rail shall conform to NYC Department of Parks & Recreation Standard Detail Sheet "Barrier Rail Types A-D".

MATERIALS: All timber posts & rail shall be similar to those manufactured by MCM Forest Products, Hoboken, NJ, or approved equal.

Posts and Rails: Shall be manufactured of No. 1 common Douglas Fir or Yellow Pine. The posts and rails shall be manufactured in accordance with details shown on the plans. All exposed corners and faces shall be free from damage, dog holes, and pike or cant holes.

Hardware: All hardware shall be hot-dipped galvanized and shall include bolts with necessary nuts and washers, timber connectors, nails, and other metal fastenings. Bolts and nuts shall conform to ASTM A307.

Broken Stone: Each post shall be supported by a foundation of bagged stone as shown on the standard detail. Recycled concrete aggregate, three-quarter (3/4) inch blend in a burlap bag is acceptable.

PERSERVATIVE TREATMENT: All wood components shall be pressure preservation treated in strict accordance with the provisions of the AWPA standards. Wood shall be seasoned, either by air-drying or kiln drying, and the moisture content prior to treatment shall be not more then 25%. Wood shall be treated to a net retention of .40 pounds per cubic foot with ACQ (ammoniacal copper quatenary), Copper Azole preservation, or approved equal. The preservative shall penetrate 2.5 inches or 85% of the sapwood. All details of treatment methods, quality, control and product testing shall be in accordance with the appropriate AWPA standards. In accordance with New York State law, Bills A102 and S7167, CCA (chromated copper arsenate) treatment must not be used.

If any other preservative treatment is proposed, the Contractor shall submit documentation that such treatment conforms to the AWPA Standards for treatment of the wood for the intended use.

Posts shall be dried at least thirty days after treatment and prior to installation. All fabrication shall be performed prior to treatment. Where field cuts have to be made, the cut ends shall have two coats of concentrated preservative brushed on. Certificate of compliance from the treating plant shall be submitted to the Engineer.

EXECUTION:

Barrier rails damaged by the storm shall be removed, salvaged and reset in locations within the same site, where barrier rails existed before Sandy. Any loose barrier rail members in good conditions shall

be salvaged and used on site as directed by the Engineer.

All new barrier rails shall be assembled and installed in accordance with the Standard Details. Set all carpentry work accurately to required levels and lines, with all members plumb, true, and accurately cut and fitted. Securely attach carpentry work to substrates by anchoring and fastening as shown on drawings and as required by recognized standards. Do all cutting, fitting, and patching required to properly fit rough carpentry work. Make tight connections between members. Install fasteners without splitting wood. Deep tool marks in wood surfaces shall be considered evidence of poor workmanship and cause for rejection of the pieces affected.

Contractor shall backfill surrounding area to provide positive drainage and in accordance with the drawings. All bolts shall be cut and peened as directed by the Engineer.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11.

WOOD TREATMENT AFFIDAVIT: The Contractor shall provide at his own expense a sworn affidavit as to the type, grade and quality of preservative treatment provided, and the net final retention in pounds per cubic foot of wood impregnated all conforms to the requirements of the specifications.

SHOPDRAWINGS: If necessary, shall be as per Section C, Special Conditions Article 11.

MEASUREMENT AND PAYMENT: The quantity of **REMOVE & RESET TIMBER BARRIER RAILS** to be paid for under this item shall be the number of **LINEAR FEET** of barrier rails to be erected form salvaged timber barrier rail members, measured along the axis of each railing, furnished and erected in accordance with the plans and specifications and directions of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of barrier rails to be reset form salvaged timber barrier rail members, and shall include removals of barrier rails and members, salvaging , cleaning timbers, excavating, backfilling, bagged stone, cut and peen of bolts, and all other expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

MEASUREMENT AND PAYMENT: The quantity of **TIMBER BARRIER RAIL** to be paid for under this item shall be the number of **LINEAR FEET** of each type, measured along the axis of each railing, furnished and erected in accordance with the plans and specifications and directions of the Engineer.

The price bid shall be a unit price per **LINEAR FOOT** of each type of rail and shall include preservative treatment, excavating, backfilling, bagged stone, cut and peen of bolts, and all other expenses necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

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Rev. 7/6/2012

ITEM NO. 70 TOPSOIL FOR SEEDED AND SODDED AREAS

WORK: Under this Item, the Contractor shall furnish, place, and incorporate **TOPSOIL FOR SEEDED AND SODDED AREAS** in accordance with the plans, specifications, and directions of the Engineer. The Contractor shall be liable for any damage to property caused by topsoil operations and all areas and construction disturbed shall be restored to their original condition, to the satisfaction of the Engineer.

MATERIALS:

Topsoil: Shall be a sandy/ loam, friable soil that has been removed to a depth of one foot (1') or less, if subsoil is encountered. Topsoil shall be of uniform quality, free from hard clods, stiff clay, hard pan, sods, partially disintegrated stone, lime, cement, ashes, slag, concrete, tar residues, tarred paper, boards, chips, sticks, or any other undesirable material. No topsoil shall be delivered in a frozen or muddy condition.

Topsoil shall be provided by Island Topsoil, Syosset, NY; American Landscape Supply Limited, Huntington Station, NY or approved equal.

1. Organic Content: Topsoil shall contain at least three percent (3%) organic matter determined by loss on ignition, of moisture-free samples dried in accordance with the current method of the Association of Official Agricultural Chemists. The organic content shall not exceed eight percent (8%).

2. Theacidityrange shall be pH 6.0 to pH 7.5 inclusive.

3. Soil Textural Analysis: Topsoil shall consist of the following percentages of sand, silt and clay. Any soil that does not meet the requirements below will be rejected and removed from the site. When directed by Arboriculture and Horticulture Unit, the Contractor may be granted permission to screen delivered topsoil in order to achieve particle size compliance. Additional testing at the Contractor's expense will be required to confirm compliance after completion of on-site screening.

Sand (0.05 to 2 mm)	40% to 75%
Silt (0.002 to 0.05 mm)	15% to 65%
Clay (<0.002 mm)	20% maximum

4. ElectricalConductivity shall be maximum 1.50 mmhos/cm. Ahigherlevelwouldindicate excessivesaltcontentandmaterialwillberejectedandremovedfromthesite.

5. Nutrients: Topsoil test results shall show recommendations for soil additives or fertilizers to correct nutrient deficiencies as necessary. Soil additives and fertilizers shall be incorporated as necessary at the Contractor's expense. Follow the fertilizer recommendation as provided by the required laboratory.

The Contractor shall at the direction and discretion of the Engineer, or when quantities exceed one hundred (100) cubic yards, furnish a certified report of an approved Analytical Chemist showing the analysis of representative samples of the topsoil which they propose to use. All samples are to be received by the Engineer and delivered to the laboratory, and the price bid shall include inspection and laboratory charges. Samples shall be submitted 48 hours prior to the delivery of topsoil.

No topsoil shall be delivered until the approval of samples by the Engineer, but such approval shall not constitute final acceptance. The Engineer reserves the right to reject on or after delivery any material that does not, in their opinion, meet these specifications.

INSTALLATION:

Preparation of Subgrade: Hollows, depressions, and gullies shall be filled with acceptable material free from stones over two inches (2") in diameter, cinders, rubbish, and other unsuitable material. All surplus material and debris shall be removed and disposed of as directed by the Engineer.

Loosen subsoil by scarifying, ripping or tilling using disks, harrows or other suitable equipment to a depth of (4"-6") immediately before placing any topsoil. Repeat cultivation in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

Placement and Spreading of Topsoil: No topsoil shall be handled when, in the opinion of the Engineer, it is too wet. Place and spread approved topsoil in dry weather on dry unfrozen grade.

Preparation of Final Grade: Thoroughly cultivate topsoil to minimum depth of (4") by rototilling or hand methods where compaction has occurred and to break up all soil lumps. Float until surface is smooth. Topsoil for all seeded or sodded areas shall be spread to a compacted depth of five inches (5").

SUBMITTALS: All submittals shall be as per General Conditions, Section C, Special Provisions, Article 11.

Proposed Samples and Test Results: The Contractor shall submit two (2) five pound (5 lb.) bags to the Landscape Architect, with the testing report attached, for approval prior to delivering material to the site.
The Contractor shall at the direction and discretion of the Engineer, or when quantities exceed one hundred (100) cubic yards, furnish a certified report showing the analysis of representative samples of the topsoil which they propose to use. Testing shall be performed by Rutgers Cooperative Research & Extension Testing laboratories or equivalent laboratory as approved in writing by the Agency's Specifications and Estimating department. Laboratory testing performed more than six months prior to the Contractor's submittal date will be rejected. The testing shall include: pH, organic matter content (loss on ignition method), soluble salt level, sieve analysis and soil textural analysis and nutrient additive recommendations. Price bid shall include all inspection and laboratory fees.

No topsoil shall be delivered to the site until the approval of samples by the Landscape Architect, but such approval shall not constitute final acceptance.

DELIVERY AND APPROVAL: The Contractor shall notify the Resident Engineer a minimum of 48 hours prior to the intended topsoil delivery date. All imported topsoil shall be delivered in trucks and will be subject to visual inspection and additional testing. The topsoil shall NOT be spread until the Engineers' sampling and testing is completed, unless otherwise directed. The Engineer reserves the right to reject any topsoil which does not fall within acceptable limitations of this specification and the initial submittal to design including the landscape architect approved sample and the approved test report. Where the topsoil is rejected, it shall be immediately removed from the site. Where it has been determined by the Arboriculture and Horticulture Unit that soil amendments are needed per soil lab recommendations, the correction shall be made at the Contractor's expense. Additional testing after amending shall also be at the Contractor's expense. All testing shall be performed by Rutgers Cooperative Research & Extension testing laboratories or equivalent laboratory as approved in writing by the Agency's Specifications and Estimating department.

Engineer's determination based on test results of delivered material: Under no circumstances shall the organic content exceed twelve percent (12%). Should Agency test results of delivered material show organic content greater than twelve percent (12%), the soil shall be rejected and removed from the site.

Should Agency's test results show pH between pH 5.0 and 6.0, and where directed by the Engineer, limestone may be added to bring the soil to the required minimum pH 6.0. The Contractor will be required to re-test after incorporation of limestone to assure a minimum pH 6.0. Should Engineer's test results of delivered material show a pH greater than 7.5, the soil shall be rejected and removed from the site.

The Engineer reserves the right to reject on or after delivery any material that does not, in their opinion, meet these specifications.

APPEAL PROCESS: The Resident Engineer shall visually check for discrepancies between the delivered soil and the approved submittal and sample. If the Engineer suspects that the topsoil delivered to the site has excessively high levels of organic matter, pH, clay, etc. that would not be within the allowable levels listed in this specification, the soil will be rejected until additional testing proves otherwise. Should the Contractor contest the Engineer's determination, the Arboriculture and Horticulture Unit will take samples so additional tests may be performed at Contractor's expense. Testing shall be performed by Rutgers Cooperative Research & Extension Testing laboratories or equivalent laboratory as approved in writing by the Agency's Specifications and Estimating department. These results shall be considered final.

MEASUREMENT AND PAYMENT: The quantity of **TOPSOIL FOR SEEDED AND SODDED AREAS*** to be paid for under this Item shall be the number of **CUBIC YARDS** of topsoil furnished, placed, and incorporated in the completed work in accordance with the plans, specifications, and directions of the Engineer, measured in trucks used for delivery, at the site of the work. No topsoil shall be furnished until ordered by the Engineer.

The price bid shall be a unit price per **CUBIC YARD** of topsoil measured in trucks used for delivery, and shall include the cost of all labor, materials, and equipment necessary to prepare topsoil areas, soil testing, furnish, place, and incorporate topsoil and all other work incidental thereto, in accordance with the plans and specifications, to the satisfaction of the Engineer.

The furnishing and incorporating of limestone where deemed necessary by the Agency shall be paid for under the item "Limestone".

Unclassified Excavation, Earth Moving Operations, or Strip, Store and Spread Existing Topsoil (where required prior to installation of new topsoil) shall be paid under their respective items.

*Delivery ticket with name and address of vendor, date, and estimated volume must be supplied to the Engineer prior to truck measurement.

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Rev. 2/16/2012

ITEM NO. 71 **GRASS SEED WITHOUT COMPOST**

WORK: Under this Item, the Contractor shall furnish **GRASS SEED WITHOUT COMPOST,** prepare, plant, water, establish, and maintain lawn areas in accordance with the plans and specifications, or as directed by the Engineer. In addition the Contractor shall furnish extra materials to D.P.R. M. & O., as specified under the heading EXTRAMATERIALS.

The Contractor shall be liable for any damage to property caused by their seeding operations. All areas and construction disturbed shall be restored to their original condition, to the satisfaction of the Engineer.

MATERIALS:

Grass Seed: Grass Seed shall be fresh, recleaned seed of the latest crop mixed in the following proportions by weight and meeting the following standards of pure live seed content (Purity & Germination) and maximum allowable weed seed content. All seed shall be free of noxious weeds and undesirable grasses.

GRASS SEED MIXTURE

PERCENT BY WT.	GRASS SEED	PURITY SEED	MAXIMUM GERMINATION	WEED
60%	TALL FESCUE - One or more of the following varieties: Apache II, Arid 3 Cochise III, Coronado Gold, Falcon IV, Justice, Jaguar III, Lancer (SH), Masterpiece, Rebel IV, Rebel Jr.(SH), Rebel Sentry, Rembrandt, Tomahawk E+, RTF or approved equal.	98%	85%	.25%
20%	BLUEGRASS - One or more of the following varieties: Able I (SH), Blacksburg, Glade (SH), Moonlight, Midnight, America (SH), Brilliant, Ram (SH), Touchdown (SH), Warren's A-34 (SH), Bristol (SH), Lofts 1757 (SH) or approved equal.	98%	80%	.10%
20%	PERENNIAL RYEGRASS - One or more of the following varieties: Brightstar II, Manhattan 4, Citation Fore, Elfkin or approved equal.	98%	85%	.25%

NOTE: The cultivars followed by "(SH)" exhibit better shade tolerance than other varieties, under

moderate shade.

All seed shall be interagency certified under the auspices of a State Seed Improvement Cooperative and must bear their seals of certification on each fifty pound (50 lb.) bag.

All Grass shall be delivered in sealed standard size bags of the vendor, showing weight, analysis and name of vendor. It shall be stored as directed by the Engineer in such a manner that its effectiveness will not be impaired. The Engineer reserves the right to reject, on or after delivery, any material which does not, in their opinion, meet these specifications. The rate of seeding shall be ten pounds (10 lbs.) per thousand square feet (1,000 s.f.).

Limestone: The rate of application of limestone per one thousand square feet (1,000 s.f.) shall be as follows, depending on the hydrogen ion concentration (pH) shown by a pH test (test to be provided by the Contractor at no additional cost to the City).

pH	RATE (LBS.)
5.0 to 5.5.	100
5.5 to 6.0.	50
6.0 to 6.8.	25
over 6.8	0

Commercial Fertilizer Low Phosphorus (Slow Release): shall have the following composition by weight: Nitrogen (N) shall be min. 7% - max. 10%, of which min. of 50% is slow-release; available Phosphorus (P) shall be min. 1% - max. 2%; and soluble Potash (K) shall be min. 4% - max. 12%.

Fertilizer shall be a *pesticide free* (no weed-and-feed) product such as "Healthy Turf (8-1-9)" as manufactured by Plant Health Care, Inc, Pittsburgh, PA; or Safer Ringer Lawn Restore (10-2-6) as manufactured by Woodstream Corp., Lifitz, PA; or Nutrients Plus (7-2-12) as manufactured by Nutrients Plus, Virginia Beach VA, or approved equal.

All Commercial Fertilizer Low Phosphorus (Slow Release) shall be delivered in standard size bags of the manufacturer, showing weight, analysis, and name of manufacturer. It shall be stored as directed by the Engineer in such a manner that its' effectiveness will not be impaired.

Two (2) applications of acceptable commercial fertilizer shall be applied by machine, each application at the rate of twenty pounds (20 lbs.) per thousand square feet (1,000 s.f.) or as recommended by the manufacturer. The first application shall be made at the time of installation of Seed, as specified.

The second application shall be made approximately six (6) months after the first application. This treatment shall take place during the next appropriate fertilizing season; that is, the following Spring or Fall, and shall be subject to the direction of the Engineer and/or Landscape Architect.

The second application shall be applied to the surface only. Incorporation shall be achieved by thoroughly watering the entire area after application. The Contractor shall provide all labor and

materials including water if not available from NYC sources.

TIME OF SEEDING: Grass Seed shall be sown in the Fall during August and September or in the Spring during March, April, and May or at such other times as are approved by the Engineer. All seeding is to be done in moderately dry to moist (not wet) soil and at a time when the wind does not exceed a velocity of five (5) miles per hour.

PREPARATION OF SEED BED: Prior to seeding, all areas to receive seed shall be mown to a height of three-quarter inch (3/4") and raked clean. The subgrade shall be thoroughly loosened with a rototiller to a depth of eight inches (8") and all sticks, stones, roots, vegetation, or other objectionable material which might interfere with the formation of a finely pulverized seed bed shall be removed from the soil. Rototilling shall be performed prior to installation of in-ground irrigation, if any. If additional topsoil is required to achieve a full six inch (6") topsoil depth, it shall be added prior to seeding and raked smooth. When added topsoil is four inches (4") or more in depth, it shall be compacted to the satisfaction of the Engineer.

INSTALLATION: Limestone, as needed, and Commercial Fertilizer - Low Phosphorus (Slow Release) shall be worked into the top three inches (3") of soil. Grass Seed shall be sown, covered to the proper depth, and firmed in such a manner that a uniform stand will result. All areas to receive seed shall then be compacted using a two hundred pound (200 lb.) roller.

MAINTENANCE: The Contractor shall maintain all seeded areas until acceptance of the contract. The Contractor shall properly water as required to maintain a moist seed bed for optimum germination and as often as required to maintain optimum growing conditions for the new stand of grass, until acceptance of the contract. If water is not available from New York City sources, the Contractor is responsible for supplying water from their own source.

The Contractor shall reseed any areas which fail to show a satisfactory stand of grass with the specified mixture of seed and fertilizer as many times as is necessary, at no additional cost to the City, until acceptance of the Contract. The Contractor shall properly mow and otherwise maintain the grass at a maximum height of three inches (3") or as directed by the Engineer until final acceptance of the whole work under this contract.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11. The Contractor shall submit a document attesting to the seed mix composition for approval prior to performing the seeding operation. The Contractor shall submit the method of work that demonstrates avoidance of over compaction.

EXTRA MATERIALS: The Contractor shall furnish (supply & deliver only, not install) extra materials and deliver to D.P.R. Borough Maintenance and Operations (M. & O.) as follows:

Three (3) - Twenty pound (20 lb.) bags of Grass Seed. The seed mix, for the purpose of EXTRA MATERIALS shall be:

Either TURF SAVER with RTF, turf-type tall fescue blend, with 40% RTF as manufactured by

Barenbrug USA; or VIGARO Ultra Turf, tall fescue grass seed blend, with 9% RTF, as manufactured by Barenbrug USA; or approved equal.

The above materials shall be delivered to the Sector A.P.R.M. or Borough Foreman of Mechanics, and a signed receipt shall be submitted to the Engineer to acknowledge M&O. receipt of the aforementioned materials.

MEASUREMENT AND PAYMENT: The quantity of **GRASS SEED WITHOUT COMPOST** to be paid for under this Item shall be the number of **POUNDS** of Grass Seed furnished, planted, grown, and maintained in accordance with the plans and specifications, to the satisfaction of the Engineer.

The price bid shall be a unit price per **POUND** of Grass Seed Without Compost and shall include the cost of labor, materials (including water), and equipment necessary or required to furnish seed, prepare the seed bed, plant, fertilize, reseed, grow, and maintain the seeded areas and all work incidental thereto, in accordance with the plans and specifications, to the satisfaction of the Engineer.

In addition, the Contractor shall deliver EXTRA MATERIALS as outlined above to D.P.R. M. & O. The Contractor shall include cost in the bid price. Failure to supply EXTRA MATERIALS shall result in the city taking a Total Credit of three hundred dollars ($300.00) regardless of the number of pounds installed.

Furnishing and incorporating Limestone, Commercial Fertilizer - Low Phosphorus (slow release), and Topsoil shall be paid for under the items: Limestone, Commercial Fertilizer - Low Phosphorus (Slow Release), and Topsoil for Seeded and Sodded Areas.

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Rev. 02/19/2008

ITEM NO. 72 RESET WEATHERVANE AND PAVILION ROOF CAP

WORK: Under this Item, the Contractor shall reset weathervane and pavilion roof cap on fishing pier, in accordance with the plans, specifications, and directions of the Engineer.

EXECUTION:

The Contractor shall take the following steps when performing the re-installation:

1. Contractor to reset metal pavilion roof cap that has shifted during the storm.
2. If fasteners have been damaged, Contractor to re-fasten the aluminum roof cap with galvanized fasteners.
3. Contractor to ensure weathervane is in align with "true north". Contractor shall verify the direction of "true north", prior to installation.

MEASUREMENT AND PAYMENT: The quantity of **RESET WEATHERVANE AND PAVILION ROOF CAP** to be paid for under this item shall be **LUMP SUM** in accordance with the plans, specification, and orders of the Engineer.

The prove bid shall be **LUMP SUM** shall include the cost of furnishing all labor, materials, fasterners, and equipment necessary to complete work as prescribed in the specifications, including the following additions:

END OF PAGE

NonStd. 12/21/12

ITEM NO. 73 **ASSESSMENT OF BUILDINGS FOR MOLD –SMALL BUILDING**
ITEM NO. 74 **ASSESSMENT OF BUILDINGS FOR MOLD –LARGE BUILDING**
ITEM NO. 75 **MOLD REMEDIATION**

WORK: Under this item, the Contractor shall provide an assessment of mold of indoor environments for facilities as identified by the Engineer. Based on the results of the assessment and approved remediation plan, the Contractor shall provide all labor, equipment and materials to perform the work to clean and remove fungi from the buildings.

ASSESSMENT: The Contractor shall have a qualified consultant or engineer to make an assessment of the designated buildings utilizing ASTM E2418-06 "Standard Guide for Readily Observable Mold and Conditions Conducive to Mold in Commercial Buildings: Baseline Survey Process", United States Environmental Protection Agency (EPA) Mold Remediation in Schools and Commercial Buildings, EPA 402-K-01-001 and the NYC Department of Health & Mental Hygiene Guidelines on Assessment and Remediation of Fungi in Indoor Environments. These guidelines will be utilized to develop the remediation plan, along with any site-specific requirements. Testing shall include, but not limited to, all hidden areas, such as crawl spaces, attics, behind wallboard, carpet backing and padding, wallpaper, molding, insulation, ceiling tiles, paper covered gypsum wallboard (drywall), structural wood, cellulose containing surfaces, ventilation systems and other materials suspected of hiding growth should be identified.

The Contractor shall submit a report the indicates the test results and the requirements for remediation of all mold found within the building shall be submitted to the Engineer. The remediation plan shall be approved by the Engineer prior to proceeding with mold remediation activities.

ASSESSMENT OF BUILDINGS FOR MOLD –SMALL BUILDING shall be building with a floor area of less than 5,000 square feet. The area shall be determined by the measurement at the exterior dimensions of the building and number of floors. Area shall be adjusted for partial floors.

ASSESSMENT OF BUILDINGS FOR MOLD –LARGE BUILDING shall be building with a floor area of greater than 5,000 square feet. The area shall be determined by the measurement at the exterior dimensions of the building and number of floors. Area shall be adjusted for partial floors.

REMEDIATION: The contractor shall perform mold remediation upon approval of the remediation plan by the Agency. The mold remediation shall be performed by qualified persons to perform the work. The contractor shall submit the names and qualifications of personnel/subcontractor to the Agency for approval prior to the commencement of the mold remediation.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Provisions, Article 11. Submittals shall include the following:

Assessment:

1. Qualification of consultant or engineer performing the assessment of buildings.
2. List of all personnel to be involved in the work with their training and certifications.

Remediation:
Submit the following as required by the specific remediation plan approved for each building.
1. List of all personnel to be involved in the work with their training and certifications.

2. List of all products and procedures proposed for use in performance of the work, when required:
   a. List all work areas and containments,
   b. Locations and types of all decontamination enclosures,
   c. Entrances and exists to the work area and/or containments,
   d. Type of remediation activity, technique for each work area and/or containment,
   e. Number and location of negative air units and exhausts,
   f. Calculations for determining number of negative air pressure units,
   g. Location of water and electric connections to building services,
   h. Waste transport routes from the work area to the waste storage container.

3. Respiratory Protection Program
   a. Provide a copy of the firm's written respiratory protection program.

4. Employee Training Program
   a. Provide a copy of the firm's written employee hazard communication program.
   b. The communication program will provide a review the potential exposure with fungal spores during remediation work.
   c. The communication program will provide a review of the potential exposure with the cleaning agents to be used during the remediation work.

5. Employee Instruction
   Provide documentation showing that each employee has been instructed on the following items:
   a. Use and fit of respirator
   b. Protective clothing
   c. Protective measures
   d. Safety and Emergency Egress Procedures
   e. Site specific fall protection plan and training

6. Material Safety Data Sheets (MSDS)
   Provide a MSDS on the cleaning agents selected for use on this project. Substitution of alternative products is not permitted without authorization.

7. Preliminary Schedule:
   Provide an estimate of manpower to be utilized and the time required for completion of each major Work Area. Include estimated size and number of crews and work shifts.

8. Project Close-out Submittals:

a. All waste disposal tickets,
b. Daily progress logs,
c. A list of all Workers used in the performance of the project,

QUALITY ASSURANCE:

1. Conform to all Federal, State, and Local regulations, guidelines and rules which govern the handling and disposal of mold materials.
   a. United States Environmental Protection Agency (EPA) Mold Remediation in Schools and Commercial Buildings, EPA 402-K-01-001.
   b. New York City Department of Health & Mental Hygiene Guidelines on Assessment and Remediation of Fungi in Indoor Environments.
   c. Occupational Safety and Health Administration (OSHA) Respiratory Protection Standard, 29 Code of Federal Regulations (CFR) 1910.134.
   d. OSHA – Fall Protection, 29 CFR 1926.451 to 1926.1060.
   e. OSHA Lockout Tag-out 29 CFR 1926.417 and 1926.702.

RECORD KEEPING:

1. Daily Log
   The Contractor shall maintain a Daily Project Log consisting of a three ring binder. The daily project log will be utilized each day to document the following information:
   a. Date and time of the project,
   b. Name of Project Superintendent,
   c. Brief description of daily work activities,
   d. Contained area sign in and sign out sheet,

MATERIALS:

A. Protective Clothing

1. The Contractor will provide the workers with the required protective disposal clothing as recommended in the referenced guidelines, consisting of full-body coveralls, head covers, gloves and boots.

2. The Contractor will not under any circumstances permit any person to enter the work areas without the appropriate protective clothing and equipment. The Contractor will provide protective clothing for use by the Agency and their Environmental Consultant. The Contractor will furnish as many sets as required for full-time monitoring.

B. Respiratory Protection

1. Respirators and High Efficiency Particulate Air (HEPA) filters will be used, when required, as recommended in the guidelines and approved by the National Institute of Occupation Safety and Health (NIOSH).

2. Respirators will be individually fit-tested to personnel on a yearly basis.

3. No respirator will be issued to personnel without such personnel participating in a respiratory training program.

4. The Contractor shall provide and make available a sufficient quantity of respirator filters so that filter changes can be made as necessary during the workday. Filters will be removed and discarded during the decontamination process. Filters cannot be reused. Filters must be changed if breathing becomes difficult.

HEPA FILTER EQUIPMENT:

1. All fan and vacuum units will be equipped with a High Efficiency Particulate Absolute (HEPA) filter.
   a. Containment areas, where required will be maintained under negative pressure relative to the surrounding area. This will be accomplished with a HEPA-filtered fan unit exhausted to the outside.
   b. All interior surfaces to be cleaned, exterior of plastic sheeting containing waste material, final vacuuming of the interior surfaces of the work area and surfaces outside of the work area where dust may have settled will be HEPA-vacuumed.
2. Cleaning Agent
   a. When required, will be applied with a moist cloth, sprayed or as specified by the manufacturer.

EXECUTION:

1. The scope of work includes removal of visual mold/fungal growth on contaminated materials. The abatement procedures will be identified for each remediation project based on the approved remediation plan.
   a. The Contractor will designate a full-time Project Supervisor who is qualified to enter the work areas and meets the requirements of a "Competent Person" as defined by OSHA 1926.1101.
   b. If the Project Supervisor is not on-site at any time whatsoever, all Work will be stopped. The Project Supervisor will remain on-site until the Project is complete.
   c. The Project Supervisor will maintain a Project Log Book and a Waste Disposal Log.
   d. The Project Supervisor will be responsible for the performance of the Work and will represent the Contractor in all respects at the Project site. The Supervisor shall be the primary point of contact for the Agency.

2. Hazard Communication
   a. The Contractor shall post warning signs at all entrances or openings to the work areas. Warning signs may be in the form of continuous plastic tape.
   b. The Contractor will co-ordinate with DASNY, the Consultant and the building owner regarding notification of the occupants and other Contractors on-site.

3. Temporary Utilities
   a. Shut down and lock out all electrical power to the Work Areas.
   b. Provide power from other sources (i.e. generator).

c. Provide temporary lighting with "weatherproof" fixtures for all Work Areas including decontamination chambers.
d. The entire Work Area shall be kept illuminated at all times.
d. All temporary devices and wiring used in the Work Area shall be capable of decontamination procedures including HEPA vacuuming and wet-wiping.
e. Utilize domestic water service, if available, from existing system. Provide hot water heaters with sufficient capacity to meet Project demands.

4. Containment Barriers
   a. When containment of the work areas is not necessary, dust suppression methods will be utilized.
   b. When containment of the work area is required, the Contractor must be careful not to disturb fungal contaminated building materials while isolating work areas to prevent the release of fungal spores. Any pre-cleaning prior to the erection of the containment will be completed as required. Workers shall wear respirators when installing isolation barriers if fungal contaminated surfaces (walls or surfaces with visible settled dusts) are likely to be disturbed. The Contractor shall completely isolate the work areas for the duration of the wor by sealing off all walls, floors, openings, and fixtures in the work areas including, but not limited to, heating and ventilation supply air ducts and diffusers and return air ducts and grilles (HVAC system totally de-energized - no HVAC system airflow into or out of work area), return air grilles, common return air plenums, doorways, corridors, windows, skylights, and lighting with polyethylene sheeting held securely in place as described in this section.
   c. Containment Entry and Exit Procedures will be established as required for the work.
   d. Personnel, Equipment and Waste Decontamination Procedures will be established as required for the work.

5. Negative Pressure
   a. When Negative Pressure is required, the Contractor shall establish a negative air pressure differential inside the enclosed areas relative to interior areas outside the containment before remedial operations begin. No air must flow from inside the enclosed work areas to the areas outside. Unless otherwise indicated in these specifications, the term "outside the work area" shall mean areas within the building that are not in the enclosed work areas. The Contractor shall ensure that air pressure differential is maintained demonstrated by manometer until the Consultant has determined that the work area has passed the final inspection.

6. Work Procedures
   a. All materials will be decontaminated and/or removed under containment, or minicontainment. As waste is removed, it will be placed into a disposal container promptly. Disposal containers, at a minimum, will consist of double bagging using 6-mil polyethylene bags. Bags will be taped to form an airtight seal and labeled appropriately. Waste from HEPA-filtered vacuums shall be double bagged in 6- mil polyethylene bags.
   b. The Contractor at all times will keep the site and work area free from accumulations of bagged dust material or rubbish caused by its operations and free from any flammable materials or other source of fire hazard. During the performance of the work, the Contractor shall remove

all bagged material from and about the work site in strict accordance with the specifications and applicable codes and regulations.

c. All visually contaminated materials and adjacent visually uncontaminated material will be decontaminated and/or removed under full containment unless specified otherwise.

d. Cleaning agents will only be utilized when specified.

e. In the event that areas adjoining the enclosed project area become or are suspected of becoming contaminated with spores as a result of the Contractor's work, the Contractor shall thoroughly and totally decontaminate (for example, use separate HEPA vacuum in occupied space) the affected areas. These areas shall be subject to detailed visual inspection and final clearance sampling as may be requested by the Consultant.

7. Clearance Preparation

a. When containment areas are not utilized, the work area and areas used by remedial workers for egress will be cleaned as specified.

b. When containment areas are utilized, all work area side surfaces and layers, of the polyethylene barrier sheeting will be cleaned as specified. If negative pressure is utilized, the negative air machines will remain on until notified by the Consultant.

8. Final Clearance Inspections

a. After all visible accumulations of material and debris are removed, the Contractor will notify the Engineer for a final clearance visual inspection. The Contractor and Engineer will conduct a thorough visual inspection of the work area(s). If during this inspection, any visible dust or debris is observed, the Contractor will contain and re-clean the work area(s). The Contractor will pay all associated costs for the re-cleaning services.

b. Breakdown of containment will proceed only upon receipt by the Contractor of clearance issued by Agency or the Engineer..

9. Post-Remediation Air Sampling

a. The Contractor will conduct post-remediation air sampling using fungal spore traps. Air samples will be analyzed by an AIHA accredited microbiological laboratory. If fungal spore concentrations inside containment are elevated when compared to outside ambient air, the Contractor will conduct additional cleaning, and then the sampling process will be repeated.

10. Restoration of Utilities, Firestopping and Finishes

a. After final clearance remove locks and restore electrical and HVAC systems. All temporary power will be disconnected, power lockouts removed and power restored.All temporary plumbing will be removed.

b. Finishes damaged by the Contractor including, but not limited to, plaster/paint damage due to duct tape and spray adhesives, and floor tile lifted due to wet or humid conditions, will be restored and/or replaced prior to final payment. All foam and expandable foam products and materials used to seal Work Area openings will be completely removed upon completion of remediation activities.

c. All penetrations (including, but not limited to, pipes, ducts, etc.) through fire rated construction will be fire stopped using materials and systems tested in accordance with ASTM E814 on where re-insulation is part of the required work.

MEASUREMENT AND PAYMENT:

For **ASSESSMENT OF BUILDINGS FOR MOLD – SMALL BUILDING** and **ASSESSMENT OF BUILDINGS FOR MOLD – LARGE BUILDING**, the Contractor shall receive the price bid for **EACH** type of building assessed.

The price bid shall be a unit price per **EACH** assessment shall include the cost of all labor, testing, equipment, and assessment report necessary to complete the work in accordance with the plans and specifications and to the satisfaction of the Engineer.

Payment for the **REMDIATION OF MOLD** will be based on clear and legible copies of paid bills or invoices detailing the materials, its purpose, location where installed, including the date it was installed.

The amount indicated in the bid book for **REMEDIATION OF MOLD** is an assumed estimated amount which may vary from the actual amount to be paid to the Contractor during the term of this contract.

For work performed, the Contractor shall receive payment in accordance with Chapter VI "Changes and Extra Work" Articles 25, 26, 27 and 28 of the Agreement.

The Contractor warrants that the cost of materials is the same as or lower than the costs charged to other customers of the Contractor for comparable materials. In addition, the Agency shall have the right to pay less than the costs submitted by the Contractor for materials when it is determined that the Contractor should have been able to purchase such materials at a lower cost than actually paid by the Contractor.

The Contractor will be reimbursed for equipment rentals. If rental cost exceeds cost of purchase, then tool shall be handed over to a Department of Parks and Recreation designated storage yard.

All payments for materials and equipment shall be subject to audit by the Department of Parks and to post-audit by the Comptroller.

In order to facilitate post-audit by the comptroller, the Contractor agrees to maintain adequate fiscal records of its expenditures under this agreement for a period of six (6) years unless notified otherwise by the City.

The total cost of work and payments under item **MOLD REMEDIATION** shall not exceed $100,000.00

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ITEM NO. 7 6 ALLOWANCE FOR WORK DIRECTED BY THE ENGINEER

WORK: Under this item, the Contractor shall provide all labor and materials necessary for work directed by the engineer. Work completed under this item shall be only work not specified under any other contract items.

All materials shall be of acceptable quality and shall be approved by the Engineer before they are ordered. Where replacements are made, all materials must match the original in kind, quality and intended usage and shall be subject to approval by the Engineer.

MEASUREMENT AND PAYMENT: The amount indicated in the bid book is an assumed estimated amount which may vary from the actual amount to be paid to the Contractor during the term of this contract.

Payments will be based on clear and legible copies of paid bills or invoices detailing the materials, its purpose, location where installed, including the date it was installed.

For work performed, the Contractor shall receive payment in accordance with Chapter VI "Changes and Extra Work" Articles 25, 26, 27 and 28 of the Agreement.

The Contractor warrants that the cost of materials is the same as or lower than the costs charged to other customers of the Contractor for comparable materials. In addition, the Agency shall have the right to pay less than the costs submitted by the Contractor for materials when it is determined that the Contractor should have been able to purchase such materials at a lower cost than actually paid by the Contractor.

The Contractor will be reimbursed for equipment rentals. If rental cost exceeds cost of purchase, then tool shall be handed over to a Department of Parks and Recreation designated storage yard.

All payments for materials and equipment shall be subject to audit by the Department of Parks and to post-audit by the Comptroller.

In order to facilitate post-audit by the comptroller, the Contractor agrees to maintain adequate fiscal records of its expenditures under this agreement for a period of six (6) years unless notified otherwise by the City.

The allowance for this item is $ 100,000.00 Dollars for the life of this Contract.

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NonStd 12/18/12