

BATTERY PARK CITY AUTHORITY

REQUEST FOR PROPOSALS

FOR

Phase 3 Pile Remediation - Location 1 - Winter Garden

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I. SUMMARY

Battery Park City Authority d/b/a Hugh L. Carey Battery Park City Authority (“BPCA”) requests proposals (each individually, a “Proposal” or collectively, the “Proposals”) from contractors (each individually, a “Proposer” or collectively, the “Proposers”) to provide Construction services for the Phase 3 Pile Remediation - Location 1 - Winter Garden project (the “Project”). The scope of services is to include, but not be limited to providing all services necessary to remediate the existing piles located under the Winter Garden in accordance with the terms of this RFP.

Minority-Owned Business Enterprises (“MBE”) and Women-Owned Business Enterprises (“WBE”) are encouraged to submit Proposals.

This request for proposals, the attachments and any additional information submitted herewith, (collectively, the “RFP”) does not obligate BPCA to complete the selection and contract award process. BPCA reserves the right: 1) to accept or reject any and all Proposals; 2) to request additional information from any or all Proposers to assist BPCA in its evaluation process; 3) to amend or withdraw this RFP prior to the announcement of the selected firm; and 4) to award the proposed services, in whole or in part, to one or more firms. In case of an amendment to the RFP, all Proposers will be provided with a copy of any such amendment(s) and will be afforded the opportunity to revise their Proposals in response to the RFP amendment.

II. DESCRIPTION OF BPCA

BPCA is a public benefit corporation created in 1968 under the laws of the State of New York for the purpose of financing, developing, constructing, maintaining, and operating a planned community development of the Battery Park City site as a mixed commercial and residential community.

Under the Battery Park City Authority Act (the “Act”), BPCA has the following powers, among others: to borrow money and to issue negotiable bonds, notes or other obligations and to provide for the rights of the holders thereof; to acquire, lease, hold, mortgage and dispose of real property and personal property or any interest therein for its corporate purposes; to construct, improve, enlarge, operate and maintain Battery Park City; to make bylaws for the management and regulation of its affairs, and, subject to agreements with bondholders, for the regulation of Battery Park City; to make contracts and to execute all necessary or convenient instruments, including leases and subleases; to accept grants, loans and contributions from the United States, or the State of New York or the City of New York (the “City”), or any agency or instrumentality of any of them, or from any other source and to expend the proceeds for any corporate purpose; to fix, establish and collect rates, rentals, fees and other charges; and to do all things necessary or convenient to carry out the powers expressly granted by the Act. BPCA has no taxing power.

Since its inception, BPCA has caused the staged development of Battery Park City, in individual parcels, creating a richly diversified mixed use community providing residential and commercial space, with related amenities such as parks, plazas, recreational areas and a waterfront esplanade. Most individual parcels of land in Battery Park City were developed into residential and commercial buildings by tenants (“Ground Lease Tenants”) under long-term ground leases with BPCA. The Ground Lease Tenants are responsible for the maintenance, insurance and defense and indemnification of BPCA with regard to those leased parcels.

One of BPCA's key responsibilities under the Act is to operate, maintain and repair the parks and opens spaces in and around Battery Park City's residential and commercial areas. This function has been delegated by BPCA to the Battery Park City Parks Conservancy Corporation ("BPCPC") through a written Management Agreement. The BPCPC carries out its mission by maintaining 36 acres of parks, playgrounds and open spaces, including a mile-long waterfront esplanade. The BPCPC also develops programs and manages public events for the Battery Park City community. BPCA owns and has built out a commercial condominium unit in a residential building in Battery Park City, which serves as the BPCPC headquarters.

To obtain a copy of BPCA's most recently completed audited financial statements, please visit BPCA's official website at www.batteryparkcity.org. The audited financial statements and related reports found on BPCA's website will provide you with an overview of the operations for which BPCA is responsible and the areas of expertise in which the selected Proposer must be proficient. For an overview of BPCPC's operations, please visit its website at www.bpcparks.org.

III. SERVICES REQUIRED

- A. If selected, Proposer will be responsible for the services delineated in Exhibit A (the "Scope of Work"), attached hereto, including referenced drawings and specifications.
- B. All work to be performed by the selected Proposer shall be performed under the supervision of a Project Manager in charge of this engagement (the "Lead PM") who must ensure that the work completed for BPCA is performed competently and in a timely manner.

IV. KEY DATES, CONTRACT TERM AND MINIMUM QUALIFICATIONS

A. Key Dates

The following is a list of key dates, up to and including the date Proposals are due to be submitted, which is subject to change at BPCA's discretion:

- Request for Proposals issued: Wednesday March 12, 2014
- Pre-proposal meeting: Tuesday March 18, 2014 at 11:00 AM. Meeting Location: BPCA Offices, 200 Liberty Street, New York, NY 10281 (attendance is highly recommended).
- Deadline to submit questions to BPCA: Thursday March 20, 2014 by 5:00 p.m. (by email only).
All questions regarding this RFP should be submitted in writing via email to the "Designated Contact": Michael LaMancusa, Battery Park City Authority, at Michael.LaMancusa@bpca.ny.gov.
- Deadline for BPCA's response to substantive questions: March 24, 2014 (via BPCA Website & NYSCR).
- **DUE DATE FOR RESPONSES TO RFP: Wednesday April 2, 2014 by 5:00 p.m. (the "Due Date").**
- Selection and notification of successful Proposer: To be determined.

- Contract start date: April 2014.

B. Anticipated Contract Term

It is anticipated that the term of the contract awarded pursuant to this RFP (the “Contract”) will be for a period of ten (10) month BPCA reserves the right to terminate the Contract at any time, with or without cause, upon thirty (30) days written notice. BPCA reserves the right to terminate the Contract at any time, without prior notice, if the employee identified in the Proposal as the Lead Manager for this engagement ceases to be employed by the selected Proposer.

C. Minimum Qualification Requirements

The following are the Minimum Qualification Requirements for this RFP. Proposals that fail to comply with these requirements will be rejected.

- 1) The firm must be licensed to do business in the City of New York.

V. GENERAL REQUIREMENTS

A. Questions regarding MBE/WBE participation, joint ventures and sub-contracting goals

Please see Exhibit B (attached) (“Diversity Exhibit”) for contractor requirements and procedures for business participation opportunities for New York State certified MBEs/WBEs and equal employment opportunities for minority group members and women.

For questions relating to MBE/WBE participation, joint ventures and sub-contracting goals ONLY, please contact “MBE/WBE Designated Contact” Mr. Anthony Peterson at 212.417.2337.

B. Restricted Period

Applicants are restricted from making contact with anyone other than the Designated Contact or MBE/WBE Designated Contact specified above during the period from the date of publication of the notice of this RFP in the New York State Contract Reporter through approval of the Contract by BPCA (the “Restricted Period”). Employees of BPCA are required to record certain contacts during the Restricted Period, including, but not limited to, any oral, written or electronic communication with a governmental entity under circumstances where a reasonable person would infer that the communication was intended to influence BPCA’s conduct or decision regarding the governmental procurement, and to make a determination of responsibility based, in part, upon any such contact. Failure to abide by this process may result in a finding that the firm is a non-responsive Proposer.

C. Submission of Proposals

Proposals are due no later than 5:00 p.m. on April 2, 2014,.

Proposers must submit six (6) paper copies of their Proposals and one (1) electronic CD-Rom copy in a sealed package clearly marked “**Proposal Enclosed – Phase 3 Pile Remediation - Location 1 Winter Garden**” to the Designated Contact by messenger, overnight courier or certified mail to the following address:

Michael LaMancusa
Battery Park City Authority
One World Financial Center, 24th Floor
New York, NY 10281

BPCA is not responsible for any internal or external delivery delays which may cause any Proposal to arrive beyond the stated Due Date. To be considered, Proposals must arrive at the time and place specified herein and be time stamped by BPCA's time stamp prior to the Due Date. Please leave ample time for building security, as late Proposals will not be accepted. Proposals submitted by fax or electronic transmission will NOT be accepted. A Proposer may, after submitting a Proposal, amend its Proposal by submitting a second, amended Proposal, clearly labeled "**Amended Proposal Enclosed – Phase 3 Pile Remediation - Location 1 Winter Garden**" as long as the amended Proposal is submitted by the Due Date.

Public access to Proposals shall be governed by the relevant provisions of the Freedom of Information Law, Article 6 of the New York State Public Officers Law, and regulations adopted pursuant thereto.

D. Mandatory Forms

Proposers must complete and include with their Proposal all "Mandatory Forms," which can be found at the following URL address: http://www.batteryparkcity.org/pdf_n/Mandatory_Forms_Packet.pdf, by the Due Date.

These Mandatory Forms include the following:

1) NYS Standard Vendor Responsibility Questionnaire – Submit with the Cost Proposal (as described below), one (1) original unbound set of a completed NYS Standard Vendor Responsibility Questionnaire with original ink signatures. Do not include the Standard Vendor Responsibility Questionnaire in the bound copies of the Cost Proposal. The NYS Standard Vendor Responsibility Questionnaire must be notarized and signed by the individual(s) authorized to bind the firm contractually. Indicate the title or position that the signer holds within the firm.

2) State Finance Law § 139 Form 1 – one original unbound completed SFL 139 Form 1: Professional's Certifications Pursuant to SFL § 139-j and § 139-k with original signature. State Finance Law § 139 Forms 1 must be signed by the individual(s) authorized to bind the firm contractually.

3) W-9 form.

4) Statement of Non-Collusion.

5) Diversity Forms.

VI. PROPOSAL FORMAT AND CONTENTS

A. Proposal Format

The Proposal must be printed on either 8½” x 11” or 8½” x 14” paper. The Proposal will be evaluated on the basis of its content, not length. BPCA reserves the right to disqualify Proposals that fail to comply with any of these instructions.

B. Proposal Content

A Proposal in response to this RFP must include the following sections in the order listed:

- 1) Cover Letter, as follows:

The Proposal must include a signed cover Letter from a person within the firm who is authorized to bind the firm. Cover letters must be signed. **Proposals with unsigned Cover Letters will be rejected.**

The Cover Letter must include a representation by the Proposer that, except as disclosed in the Proposal, no officer or employee of the Proposer is directly or indirectly a party to or in any other manner interested financially or otherwise in this RFP.

- 2) Corporate Overview.
- 3) Proposer’s discussion of its understanding of the Services Required (see Section III).
- 4) Proposer’s Responses to the RFP Questions and RFP Additional Information Request, set forth below.
- 5) Proposers Cost Proposal, as described below.
- 6) Proposer’s response to the question regarding the use of New York State businesses set forth in Section X of the RFP.

C. RFP Questions

1. Briefly describe your firm’s background, size, and history as it may be relevant to the services required, with an emphasis on waterfront work
2. Briefly describe your firm’s experience and history with an emphasis on water front work in the rivers around NYC.
3. Describe your firm's experience and expertise relevant to the Project.
4. Has your firm or any of the firm’s partners/employees been disciplined or censured by any regulatory body or filed for bankruptcy or reorganization or has had bankruptcy proceedings initiated against it/them within the last 5 years? If so, please describe the relevant facts.
5. Are there any potential conflict of interest issues in your firm representing BPCA?
6. Are any of your employees or principals former employees of BPCA? If so, please list their names, current titles, and dates of employment with BPCA.
7. List any professional or personal relationships your firm’s employees may have with BPCA’s Board and/or staff members of BPCA.
8. Identify the Lead PM who will be the primary contact and lead person in providing services to BPCA, and who will be listed as a “key person” in any contract with BPCA.
9. Describe your proposed team’s experience (including both direct contract work and work performed under subcontracts) with similar work for other public agencies and authorities, with a particular emphasis on New York State and City agencies and authorities or Federal government agencies or

- authorities. Include contract dates, the nature of the work performed, the contracting agency, the contract number (if known) and the agency supervisor for each.
10. Submit a discussion of your approach to the work which shall briefly address your conceptual step-by-step approach towards completion of the work and outline the proposed procedures for the executing the work.
 11. Itemize the work you intend to perform with your firm's resources and/or workforce as well as the work for which you propose to utilize sub consultants.
 12. Provide a list of all proposed subcontractors for the completion of the work..
 13. Provide a list of all proposed suppliers for the completion of the work.
 14. Submit a **bar chart schedule** for completion of the work. This should include sequencing of the work, manpower staffing level, work shifts, and show all project milestones and successful overall completion
 15. Identify any and all exceptions taken to BPCA's standard form of contract attached hereto as Exhibit C detailing the reasons for such exceptions. No exceptions to the contract will be considered by BPCA after submission of the proposals. BPCA maintains the right to reject proposals based on non-conformance with the standard form of contract.
 16. Please provide any additional information which would serve to distinguish your firm from other firms and that you believe may be relevant to this RFP and your capability to perform the services requested.

D. RFP Additional Information Request

1) Insurance/Bonding:

- a. Do you impose any limitations on liability through your contracts?
- b. Describe the levels of coverage for any insurance your firm carries. List the insurance carrier(s) or provide an insurance certificate showing your firm's coverage in accordance with the following:
 - Commercial General Liability Insurance limits shall not be less than **\$1,000,000** per each occurrence and **\$2,000,000** in the aggregate,
 - Umbrella Liability limits shall not be less than **\$10,000,000**;
 - Automobile liability (Combined Single Injury, Bodily Injury and Property Damage) limits shall not be less than **\$1,000,000**;
 - Workman's Compensation shall not be less than statutory limits;
 - Employers Liability shall not be less than **\$1,000,000**;
 - Disability Insurance as required by applicable provisions of law; and
 - Products/Completed Operations in the value of **\$2,000,000**

The costs of the insurance shall be included in the Proposal. BPCA, BPCPC and the State of New York shall be listed as Additional Insured on CG 2010 (11/85) or similar form and should be included as such on all subcontracts. Policies should contain no limitations/exclusions for Labor Law claims.

- c. State whether or not you can provide payment and performance bonds, the amounts thereof (both single and aggregate) and the name of your bonding company. Provide a letter from your surety stating that you are able to provide 100% bonding for this project.

2) References:

Please provide at least three (3) client references for whom your firm has performed similar work to that requested in this RFP. For each client, please provide the name, address and telephone number for the client's.

3) Appendices:

- a. Include resumes for all key management personnel listed in your Proposal, including the staff that your firm is proposing to assign to this project.

- b. Provide a copy of each addenda submitted by BPCA with regard to this Proposal (if applicable) and a signed acknowledgment of receipt of each addenda.

4) Financial Statements: Please provide a copy of your firm's most recent Audited Financial Statements (within the last year).

E. Cost Proposal

Each "Cost Proposal" must be a lump sum with an itemized schedule of values for the services contemplated herein. **To submit a complete Cost Proposal, Proposer must submit each of the following:**

- 1) Cost proposal in the form attached hereto as Exhibit D ("Cost Proposal Form").
- 2) Labor rates in the form attached hereto as Exhibit E ("Labor Rates").

VII. THE EVALUATION PROCESS

A. Objectives

The primary objective of the evaluation process is to select a firm:

- That demonstrates a thorough understanding of the scope of the engagement and the specific responsibilities which it entails;
- Possesses adequate resources to handle assigned responsibilities and to handle unforeseen circumstances that may arise;
- Assigns highly skilled, experienced, diligent, responsible and professional personnel to perform the required services;
- Maintains high ethical standards and has an unblemished reputation;
- Has no conflict of interest between its representation of BPCA and that of other clients.

The selection process will begin with the review and evaluation of each of the written Proposals. The purpose of this evaluation process is twofold: (1) to examine the responses for compliance with this RFP and (2) to identify the complying firms that have the highest probability of satisfactorily performing the Services Required at a reasonable cost to BPCA. The evaluation process will be conducted in a comprehensive and impartial manner. The evaluation process will be conducted by a committee of BPCA's employees selected by BPCA (the "Committee"). **The Committee will evaluate the Proposals based upon the evaluation criteria for selection set forth below.**

BPCA reserves the right to reject and return unopened to the Proposer any Proposal received after the RFP Due Date. All timely submitted Proposals will be reviewed to determine if they contain all required submittals specified herein. Incomplete Proposals may be rejected.

B. Interviews

BPCA reserves the right to determine whether interviews will be necessary for any or all of the Proposers. The purpose of the interview is to further document a Proposer's ability to provide the Services Required, and to impart to the Committee an understanding of how specific services will be furnished. The proposed Lead PM, as well all other key personnel proposed to provide the services must be present and participate in the interview. The firm will be evaluated on the basis of whether the interview substantiates the characteristics and attributes claimed by the Proposer in its written response to this RFP and any other information requested by the Committee prior to the interview.

C. Evaluation Criteria for Selection

Selection will be based upon the following criteria:

- | | | |
|---|--|-----|
| 1 | Cost Proposal: | 30% |
| 2 | Expertise & Experience with relevant in-water pile work : | 35% |
| 3 | Approach to Work & Schedule: | 25% |
| 4 | Proposed MBE/WBE utilization plan (the "Utilization Plan") and/or Firm MBE/WBE status: | 10% |

D. Basis for Contract Award

The Contract will be awarded to the highest technically rated Proposer whose Proposal is determined to be responsive and in the best interests of BPCA, subject to a determination that the Cost Proposal is fair and reasonable.

VIII. NON-COLLUSION

By submitting a Proposal, Proposers hereby warrant and represent that any ensuing Contract has not been solicited or secured directly or indirectly in a manner contrary to the laws of the State of New York, and that said laws have not been violated and shall not be violated as they relate to the procurement or the performance of the Contract by any conduct, including the paying or giving of any fee, commission, compensation, gift, or gratuity or consideration of any kind, directly or indirectly, to any member of the board of directors, employee, officer or official of BPCA.

IX. IRAN DISINVESTMENT ACT

By submitting a Proposal or by assuming the responsibility of any Contract awarded hereunder, Proposers hereby certify that they are not on the “Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012” list (“Prohibited Entities List”) posted on the New York State Office of General Services website at: <http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf> and further certify that they will not utilize any subconsultant that is identified on the Prohibited Entities List on this Contract. The selected Proposer agrees that should it seek to renew or extend any Contract awarded hereunder, it must provide the same certification at the time the Contract is renewed or extended. The selected Proposer also agrees that any proposed assignee of the Contract will be required to certify that it is not on the Prohibited Entities List before BPCA may approve a request for assignment of the Contract.

During the term of any Contract awarded hereunder, should BPCA receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, BPCA will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the New York State Iran Divestment Act of 2012 within 90 days after the determination of such violation, then BPCA shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, seeking compliance, recovering damages, or declaring the selected Proposer in default of the awarded Contract.

BPCA reserves the right to reject any request for renewal, extension, or assignment for an entity that appears on the Prohibited Entities List prior to the renewal, extension, or assignment of the Contract, and to pursue a responsibility review with the selected Proposer should it appear on the Prohibited Entities List hereafter.

X. ENCOURAGING USE OF NEW YORK STATE BUSINESSES IN CONTRACT PERFORMANCE

New York State businesses have a substantial presence in State contracts and strongly contribute to the economies of the state and the nation. In recognition of their economic activity and leadership in doing business in New York State, Proposers for this Contract for commodities, services or technology are strongly encouraged and expected to consider New York State businesses in the fulfillment of the requirements of the Contract. Such partnering may be as subcontractors, suppliers, protégés or other supporting roles.

Proposers need to be aware that all authorized users of this Contract will be strongly encouraged, to the maximum extent practical and consistent with legal requirements, to use responsible and responsive New York State businesses in purchasing commodities that are of equal quality and functionality and in utilizing services and technology. Furthermore, Proposers are reminded that they must continue to utilize small, minority and women-owned businesses, consistent with current State law.

Utilizing New York State businesses in State contracts will help create more private sector jobs, rebuild New York’s infrastructure, and maximize economic activity to the mutual benefit of the contractor and its New York State business partners. New York State businesses will promote the contractor’s optimal performance under the Contract, thereby fully benefiting the public sector programs that are supported by associated procurements.

Public procurements can drive and improve the State’s economic engine through promotion of the use of New York businesses by its contractors. The State therefore expects bidders/proposers to provide maximum

assistance to New York businesses in their contracts. The potential participation by all kinds of New York businesses will deliver great value to the State and its taxpayers.

Proposers can demonstrate their commitment to the use of New York State businesses by responding to the question below:

Will New York State businesses be used in the performance of this contract? ☐ Yes ☐ No

If yes, identify New York State businesses that will be used and attach identifying information.

EXHIBIT A

SCOPE OF WORK **WINTER GARDEN AREA**

Phase 3 – Location 1 - Winter Garden

The purpose of this RFP is to provide construction services for the Phase 3 - Location 1 - Winter Garden project (the "Project"). The work necessary to complete the Project shall be performed strictly in accordance with the Specifications attached to the RFP as Exhibit G and associated drawings which will be posted on the BPCA website under the title "Phase 3 Pile Remediation - Location 1 - Winter Garden Drawings".

Background

Battery Park City ("BPC") is a 92-acre man-made land tract at the southwestern tip of Manhattan was constructed in the 1970's by dredging organic river soils and filling in a portion of the Hudson River with hydraulic sand fill. This fill is laterally retained with a combination of a crushed quarry stone dike, granular filter materials, timber sheeting bulkhead and a relieving platform. The relieving platform is generally 70-ft-wide, but ranges from 43 ft to 50 ft in the North and South Cove areas and the North Platform area adjacent to Stuyvesant High School. The structure consists of a concrete platform deck composed of 7 ½ inch thick pre-cast pre-stressed concrete planks integrated with a 7½ inch thick reinforced cast-in-place concrete topping slab spanning between cast-in-place concrete pile-supported bents located approximately 23 ft on center. The piles are 20-inch square pre-cast pre-stressed concrete with a design axial capacity of 110 tons. A continuous cast-in-place reinforced concrete beam, 3-ft-wide by 4 or 4½-ft-high, exists along the landside edge of the relieving platform. The beam is supported by vertical and battered piles. The back (inboard) edge of the perimeter platform is lined by vertical timber sheeting. This structure extends the entire perimeter of BPC and is approximately 7,500 linear-ft. In addition, there are two approximately 600 linear-ft relieving platforms that span over the PATH train tubes (the "PATH"). The overall width of the platforms spanning the PATH is 138 ft at the north and 147 ft at the south. The two platform structures extend from the North Cove to the 1941 bulkhead line at West Street. The combined platform area is approximately 150,000 ft² including approximately 56,000 ft² beneath the existing Winter Garden and World Financial Center buildings (the Tube platforms). The relieving platform is divided into sections or "bays" that span between each pile bent. There are approximately 650 pile bents, which contain 4-10 piles each. A pre-cast concrete seawall skirt exists along the western most boundary and protects the piles, platform and bulkhead.

The Project will consist of the piles located in the northern half of the Winter Garden, which consists of approximately 350 piles. Access to the area is from a hatch located on West St, with the last pile of each bent approximately 500' away. This Project will be staged land side from north of the glass pavilion area. All access will be gained through a hatch in the platform slab. There will be NO access granted through North Cove Marina.

The Scope of Work for the Project shall include but not be limited to the following:

Development of a site logistics plan for:

- Staging
- Batching/Pumping
- Performance of Work
- Security and Safety

Construction shall include:

- Excavation of landscape area to expose access hatches.
- Removal of access hatches.
- Excavation of each pile 2' below mud line.
- Power washing the entire exposed surfaces, including the area below the mud line (within the excavation).
- Installation of fiberglass reinforced polymer (FRP) jackets with port holes installed on alternating faces of the pile in order to maintain a constant tremie. All jackets shall be installed to product manufacturer's recommendations for placement.
- Pumping of the epoxy grout or concrete as per construction documents.
- Installation of top seals as detailed in the contract drawings.
- Backfill of the excavated area at the mud line.
- Leaving the FRP jackets in place.
- Reinstallation of the access hatches and reinstallation of soils.
- Removal of all staging equipment/fencing and return site to original condition.

The Project shall commence May 1, 2014 and must be 100% completed by October 31, 2014.

EXHIBIT B

CONTRACTOR REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED MBEs/WBEs AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

Pursuant to New York State Executive Law Article 15-A, BPCA recognizes its obligation under the law to promote opportunities for maximum feasible participation of certified MBE/WBEs and the employment of minority group members and women in the performance of BPCA contracts.

In 2006, the State of New York commissioned a disparity study to evaluate whether minority and women-owned business enterprises had a full and fair opportunity to participate in state contracting. The findings of the study were published on April 29, 2010, under the title “The State of Minority and Women-Owned Business Enterprises: Evidence from New York” (the “Disparity Study”). The report found evidence of statistically significant disparities between the level of participation of minority-and women-owned business enterprises in state procurement contracting versus the number of minority-and women-owned business enterprises that were ready, willing and able to participate in state procurements. As a result of these findings, the Disparity Study made recommendations concerning the implementation and operation of the statewide certified minority- and women-owned business enterprises program. The recommendations from the Disparity Study culminated in the enactment and the implementation of New York State Executive Law Article 15-A, which requires, among other things, that BPCA establish goals for maximum feasible participation of New York State Certified MBEs/WBEs and the employment of minority groups members and women in the performance of New York State contracts.

Business Participation Opportunities for MBE/WBEs and minorities and women

For purposes of this solicitation, BPCA hereby establishes an overall goal of 20% for MBE/WBE participation, 10 % for MBE participation and 10% for WBE participation (based on the current availability of qualified MBEs and WBEs). A contractor (“Contractor”) on the Contract must document good faith efforts to provide meaningful participation by MBE/WBEs as subcontractors or suppliers in the performance of the Contract and Contractor agrees that BPCA may withhold payment pending receipt of the required MBE/WBE documentation. The directory of New York State Certified MBE/WBEs can be viewed at: <http://www.esd.ny.gov/mwbe.html>.

For guidance on how BPCA will determine a Contractor’s “good faith efforts,” refer to 5 NYCRR §142.8.

In accordance with 5 NYCRR §142.13, Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MBE/WBE participation goals set forth in the Contract, such finding constitutes a breach of Contract and BPCA may withhold payment from the Contractor as liquidated damages.

Such liquidated damages shall be calculated as an amount equaling the difference between: (1) all sums identified for payment to MBE/WBEs had the Contractor achieved the contractual MBE/WBE goals; and (2) all sums actually paid to MBEs/WBEs for work performed or materials supplied under the Contract.

By submitting a bid or Proposal, a Proposer agrees to submit the following documents and information as evidence of compliance with the foregoing:

- A. Proposers are required to submit a Utilization Plan with their bid or Proposal. Any modifications or changes to the Utilization Plan after the Contract award and during the term of the Contract must be reported on a revised Utilization Plan and submitted to BPCA.
- B. BPCA will review the submitted Utilization Plan and advise the Proposer of BPCA's acceptance or issue a notice of deficiency within 30 days of receipt.
- C. If a notice of deficiency is issued, Proposer agrees that it shall respond to the notice of deficiency within seven (7) business days of receipt by submitting to BPCA, at the address specified in this RFP, or by facsimile at 212-417-2279 a written remedy in response to the notice of deficiency. If the written remedy that is submitted is not timely or is found by BPCA to be inadequate, BPCA shall notify the Proposer and direct the Proposer to submit, within five (5) business days, a request for a partial or total waiver of MBE/WBE participation goals. Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or Proposal.
- D. BPCA may disqualify a Proposer as being non-responsive under the following circumstances:
 - 1) If a Proposer fails to submit a Utilization Plan;
 - 2) If a Proposer fails to submit a written remedy to a notice of deficiency;
 - 3) If a Proposer fails to submit a request for waiver; or
 - 4) If BPCA determines that the Proposer has failed to document good faith efforts.

Contractors shall attempt to utilize, in good faith, any MBE/WBE identified within its Utilization Plan, during the performance of the Contract. Requests for a partial or total waiver of established goal requirements made subsequent to the Contract award may be made at any time during the term of the Contract to BPCA, but must be made no later than prior to the submission of a request for final payment on the Contract.

Contractors are required to submit a Contractor's MBE/WBE Contractor Compliance & Payment Report to BPCA on a monthly basis over the term of the Contract documenting the progress made toward achievement of the MBE/WBE goals of the Contract.

Equal Employment Opportunity Requirements

The Contractor is required to ensure that it and any subcontractors awarded a subcontract over \$25,000 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor, shall undertake or continue programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, equal opportunity shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, termination, and rates of pay or other forms of compensation. This requirement does not apply to: (i) work, goods, or services unrelated to the Contract or (ii) employment outside New York State.

Proposer further agrees to submit with the Proposal a staffing plan identifying the anticipated work force to be utilized on the Contract and if awarded a Contract, will submit to BPCA a workforce utilization report

identifying the workforce actually utilized on the Contract. Contractor will be required to make good faith efforts to achieve a participation goal of 30% of the total number of employees required for the work who are minority group members and a participation goal of 5% of the total number of employees required for the work who are women to perform the work.

Further, pursuant to Article 15 of the Executive Law (the “Human Rights Law”), all other New York State and Federal statutory and constitutional non-discrimination provisions, the Contractor and sub-contractors will not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

Please Note: Failure to comply with the foregoing requirements may result in a finding of non-responsiveness, non-responsibility and/or a breach of the Contract, leading to the withholding of funds, suspension or termination of the Contract or such other actions or enforcement proceedings as are allowed by the Contract.

For questions on MBE/WBE participation, joint ventures and sub-contracting goals ONLY, please contact Mr. Anthony Peterson at 212.417.2337.

EXHIBIT C

BPCA's standard form of contract

(attached)

CONSTRUCTION AGREEMENT

between

BATTERY PARK CITY AUTHORITY,

d/b/a HUGH L. CAREY BATTERY PARK CITY AUTHORITY

and

[CONTRACTOR COMPANY NAME]

Dated as of _____

Contract No. [xx-xxxx]

[PROJECT NAME]

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CONSTRUCTION AGREEMENT

AGREEMENT made as of the _____ day of _____, 2014, between BATTERY PARK CITY AUTHORITY, d/b/a HUGH L. CAREY BATTERY PARK CITY AUTHORITY, a body corporate and politic, constituting a public benefit corporation and having a place of business at One World Financial Center, 24th Floor, New York, New York 10281 (“Authority,” “BPCA” or “Owner”) and CONTRACTOR COMPANY NAME, a corporation incorporated under the laws of STATE, having an office at Street Address, City, Zip, Phone, (“Contractor”).

W I T N E S S E T H:

WHEREAS, BPCA has fee title to certain real property located in the City, County and State of New York, generally consisting of approximately 92 acres of land located on the west side of lower Manhattan, bounded by Pier A to the South, the westerly extension of Reade Street to the North, the United States Bulkhead Line to the East and the United States Pierhead Line to the West (collectively, “Battery Park City”); and

WHEREAS, BPCA has caused the staged development of Battery Park City, in individual parcels, creating a richly diversified mixed use community providing residential and commercial space, with related amenities such as parks, plazas, recreational areas and a waterfront esplanade; and

WHEREAS, BPCA intends to hire a contractor to perform [type of services], consisting of the Work, as hereinafter defined, for the [structure] upon which work will be performed (the “Project”), located in and adjacent to [location], in Battery Park City, in the Borough of Manhattan, County, City and State of New York (the “Site”); and

WHEREAS, Contractor has been selected to perform the Work, as hereinafter defined, upon the terms and conditions hereinafter provided; and

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and BPCA hereby agree as follows:7 #26366880_v1

ARTICLE 1 - DEFINITIONS

The following terms, wherever used in the Contract Documents, as defined herein, shall have the meanings set forth below or in the Section enumerated below next to each term:

- (a) Agreement - as defined in Section 2.2(a).
- (b) Agreement Termination Date - as defined in Section 3.1(a)
- (c) Architect - Name, address, etc. or n/a.
- (d) Artist - n/a.
- (e) Authority - as defined in the introductory clause of this Agreement.
- (f) BPCA - as defined in the introductory clause of this Agreement. BPCA hereby designates BPCA Person and Title, Project Manager, as the representative of BPCA for the purpose of acting on behalf of BPCA whenever action is required to be taken hereunder by BPCA. Such designation may be revoked in writing at any time after notice given by BPCA to Contractor. In addition, such representative of BPCA shall have full power and authority to delegate in writing any or all of her responsibilities hereunder to any one or more persons after notice to Contractor.
- (g) Certificate of Substantial Completion - as defined in Section 8.6.
- (h) Change Order - as defined in Section 9.1(b).
- (i) Construction Manager - [name and address]
- (j) Contract Documents - as defined in Section 2.2.
- (k) Contract Price - as defined in Article 4.
- (l) Contract Time - the duration of time during which Construction Manager schedules and coordinates the Work of Contractor pursuant to Section 7.2 hereof.
- (m) Contractor - as defined in the introductory clause of this Agreement.
- (n) Drawings - Project drawings comprising part of Exhibit [x].
- (o) Engineer - [name and address]
- (p) Extra Work - Any work in addition to the Work to be performed by Contractor pursuant to the Contract Documents.
- (q) Field Order - as defined in Section 9.3.
- (r) Final Acceptance - as defined in Section 8.7.
- (s) Final Requisition - as defined in Section 5.2.
- (t) Guarantor - as defined in Section 27.3.
- (u) Joint Venture - an entity created pursuant to a written agreement among two or more contractors pursuant to which each shares in the direction and performance of the Work and shares in a stated percentage of profits or losses.
- (v) Key Person/Personnel - as defined in Section 27.25.
- (w) Intentionally Omitted.8 #26366880_v1

- (x) Materialman - Supplier of Materials.
- (y) Materials - All products, materials, fixtures, tools, equipment, apparatus, and furnishings intended to form a part of the Work.
- (z) Minority Business Enterprise or Minority Owned Business Enterprise or MBE - as defined in Article 26.
- (aa) Minority or Minority Group Member - as defined in Article 26.
- (bb) Notice to Proceed – A written directive from BPCA to Contractor signed by a duly authorized BPCA representative directing Contractor to begin performance of the Work set forth in this Agreement on a particular date.
- (cc) Payment Bond - as defined in Section 13.3.
- (dd) Performance Bond - as defined in Section 13.3.
- (ee) Preceding Covered Date - as defined in Section 5.5.
- (ff) Product Data - Illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by Contractor to illustrate a Material, product or system for some portion of the Work.
- (gg) Progress Schedule - as defined in Section 3.1(a).
- (hh) Project - as defined in the third Recital of this Agreement.
- (ii) Purchase Order - as defined in Section 10.1(e).
- (jj) Requisitions - as defined in Section 5.2.
- (kk) Samples - Physical examples which illustrate Materials or workmanship and establish standards by which the Work will be judged.
- (ll) Site - as defined in the third whereas clause of this Agreement.
- (mm) Specifications - the specifications comprising part of Exhibit [x].
- (nn) Subcontract - An Agreement between the Contractor and a Subcontractor (as defined in subsection (nn), below) for work on the Site.
- (oo) Subcontractor - A person, firm, partnership or corporation under contract with Contractor.
- (pp) Term - as defined in Section 3.1(i).
- (qq) Trade Payment Breakdown - as defined in Section 5.3.
- (rr) Women's Business Enterprise or Women Owned Business Enterprise or WBE - as defined in Article 26.
- (ss) Work - as defined in Section 2.1.
- (tt) Work Completion Date - as defined in Section 3.1(a).

ARTICLE 2 - SCOPE OF WORK, MATERIALS AND LABOR

2.1 Definition of Work

Contractor shall perform and complete (and shall cause all Subcontractors to perform and complete) for BPCA the work more particularly described in Exhibit [x] - Scope of Work 9 #26366880_v1

annexed hereto and made a part hereof, required by and in conformity with the Contract Documents in connection with the construction of the Project on the Site. All materials to be furnished and labor and work to be performed and completed by Contractor and/or Subcontractors as required in the Contract Documents and in conformity with all requirements applicable with respect thereto are herein collectively referred to as the "Work."

2.2 Contract Documents

The "Contract Documents" shall consist of the following:

(a) This instrument (the "Agreement"), which includes, in addition to the text comprising Articles 1 through 27, the following:

(1) Exhibit A:

(2) Exhibit B:

Etc...

(b) The Payment and Performance Bonds (as defined in Section 13.3).

(c) Change Orders adopted pursuant to Article 9.

The Contract Documents form the contract between BPCA and Contractor. References in the Contract Documents to "the Contract", "this Contract" or "the Construction Contract" shall be deemed to include all of the Contract Documents. References to "this Agreement" or "the Agreement" shall refer to this instrument (including the Exhibits attached hereto), which is one of the Contract Documents.

2.3 Intent of Contract Documents

(a) The intent of the Contract Documents is to include in the Work all labor and materials, insurance, tools, equipment, permits, licenses, taxes, approvals, transportation, surveys, testing, field Engineering and other professional services (other than the services of BPCA's Architect, Construction Manager, Engineers and attorneys, and the inspection, survey and testing services of BPCA) and any other items required to execute and complete the Work satisfactorily and in accordance with the Contract Documents. Contractor shall perform and complete the Work in accordance with the true intent and meaning of the Contract Documents and shall perform all Work incident thereto or as is usually performed in connection therewith or as is reasonably inferable therefrom, it being the intention that all work usually performed by the trade covered by this Agreement and necessary to produce the intended result be performed by Contractor whether or not specifically covered by the Contract Documents.

(b) The Contract Documents are complementary and what is called for by one shall be as binding as if called for by all.

(c) If any conflicts or ambiguities are found in or between the Drawings and Specifications, or among any of the Contract Documents, they shall be brought to the attention of Construction Manager immediately for resolution. Architect and Construction Manager will interpret the Contract Documents so as to secure in all cases the most substantial and complete performance of the Work as is most consistent with the needs and requirements of the Work. In the event that Architect and Construction Manager shall disagree as to the interpretation of the Contract Documents, such dispute shall be presented to BPCA, which shall have sole authority to resolve the dispute.

(d) Addenda to parts of the Contract Documents are for the purpose of varying, modifying, rescinding or adding to the affected portion of the Contract Documents. All addenda should be read together with the portions of the Contract Documents to which they pertain. Where an addendum modifies a portion of a paragraph or a Section, the remainder of the paragraph or Section shall remain in force unless otherwise stated in the addendum.

(e) Captions, headings, cover pages, tables of contents and footnote instructions 10 #26366880_v1

contained in the Contract Documents are inserted only to facilitate reference and for convenience and in no way define, limit or describe the scope, intent or meaning of any provision of the Agreement.

(f) Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

(g) Drawings and Specifications are complementary. Anything shown in the Drawings and not mentioned in the Specifications, or mentioned in the Specifications and not shown in the Drawings, shall have the same effect as if shown or mentioned in both.

(h) A typical or representative detail indicated on the Drawings shall constitute the standard for workmanship and Materials throughout corresponding parts of the Work. Where necessary, and where reasonably inferable from the Drawings or Specifications, Contractor shall adapt such representative detail for application to such corresponding parts of the Work. The details of such adaptation shall be subject to prior approval by Architect. Repetitive features shown in outline on the Drawings shall be in exact accordance with corresponding features completely shown.

(i) The layout of mechanical and electrical systems, equipment, fixtures, piping, ductwork, conduit, specialty items, and accessories indicated on the Drawings is diagrammatic, and all variations in alignment, elevation, and detail required to avoid interferences and satisfy Architectural and structural limitations are not necessarily shown. Actual layout of the Work shall be carried out without affecting the Architectural and structural integrity and limitations of the Work and shall be performed in such sequence and manner as to avoid conflicts, provide clear access to all control points, including valves, strainers, control devices, and specialty items of every nature related to such systems and equipment, obtain maximum headroom, and provide adequate clearances as required for operation and maintenance.

2.4 Completion of Drawings and Specifications

Contractor acknowledges that there are items of work which are not drawn or specified with complete detail in the Drawings and Specifications but which are required for the completion of the Work. Any such item, when identified as part of the reasonable development of the Work, shall be drawn or specified by Architect in consultation with Contractor, in a manner consistent with contemplated kind and quality and customary standards. When such drawing or specification is approved by BPCA, the drawing or specification so approved shall thereupon be part of the Contract Documents and the item of work shall be performed by Contractor as part of the Work without further action or order of Construction Manager or BPCA and without any increase in the Contract Price (as hereinafter defined) as if such drawing and specification were originally included in the Contract Documents.

2.5 Title to Materials

Title to all Materials shall immediately vest in BPCA upon payment in respect of such Materials, whether or not then incorporated or installed into the Project. The Materials shall then become the sole property of BPCA subject to the right of BPCA, Construction Manager or Architect to reject same for failure to conform to the standards of any or all of the Contract Documents. Title to all Work and Materials shall be in BPCA, free and clear of all liens, claims, security interests or encumbrances. Contractor warrants that no Work or Materials shall be fabricated or delivered to the Site by Contractor or any Subcontractor or Materialman subject to any security interest, lien or similar encumbrance.

2.6 Contractor's Obligations

(a) Contractor shall in a good and workmanlike manner perform all the Work required by this Agreement in accordance with the best practice of Contractor's trade within the time specified herein. Contractor shall supervise and direct the Work using its best skill and attention. Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures within the scope of Contractor's Work.
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(b) Contractor shall furnish, erect, maintain, and remove such construction plant and such temporary Work as may be required for the performance of the Work. Contractor shall be responsible for the safety, efficiency and adequacy of Contractor's plant, appliances and methods, and for damage which may result from failure or improper construction, maintenance or operation of such plant, appliances and methods. Contractor shall comply with all terms of the Contract Documents, and shall do, carry on and complete the entire Work under the direction of and to the satisfaction of BPCA.

(c) Contractor shall provide all equipment, tools and materials and whatever else may be required for proper performance of the Work unless stated otherwise in the Contract Documents.

(d) Contractor shall deliver all Materials at such times and in such quantities as will insure the speedy and uninterrupted progress of the Work. All Materials shall be delivered to the Site in proper order and quantity and shall be stored at the Site, if storage space is available in Construction Manager's opinion, in such places as Construction Manager shall direct; provided, that no delivery of Materials shall be made to the Site without prior approval by Construction Manager. Contractor has been advised and is aware that the Project is located in a congested metropolitan area, and there may not be sufficient space to store Materials on Site. If storage space is unavailable on Site, Contractor shall make arrangements to store materials off Site at Contractor's own cost. Contractor shall not be entitled to additional compensation for moving Materials from one storage area to another, whether such storage areas are on or off Site. No Materials shall be removed from the Site without the consent of Construction Manager. Contractor shall handle and take care of all Materials used in performance of the Work whether furnished by Contractor or BPCA, as the same are delivered to the Site or to any applicable offsite storage location and shall be solely responsible for the security and condition of the same. After final completion and acceptance of the Work, or sooner if requested by Construction Manager, Contractor shall remove all surplus Materials and scaffolding furnished by it which have not been incorporated in the Work.

(e) Contractor shall follow and perform the Work in accordance with the Contract Documents as interpreted by Architect, Construction Manager, and BPCA.

(f) Unless otherwise provided in the Contract Documents, Contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work. Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work. If Contractor observes that any of the Contract Documents are at variance with any applicable laws in any respect, Contractor shall promptly notify Architect and Construction Manager in writing, and any necessary changes shall be accomplished by appropriate modification. If Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to Architect and Construction Manager, Contractor shall assume full responsibility therefor and shall bear all costs attributable thereto.

(g) Contractor shall be responsible for collecting all paper, cartons and other debris caused by its Work or personnel, placing the same in a location designated by Construction Manager and keeping the portion of the Site upon which Contractor is performing the Work free from all debris.

(h) Contractor shall attend meetings as directed by BPCA or Construction Manager.

2.7 "Or Equal" Clause

(a) The Materials of manufacturers referred to in the Specifications and on the Drawings are intended to establish the standard of quality and design required by Architect; however, Materials of manufacturers, other than those specified, may be used if equivalent and approved by Architect, Construction Manager and BPCA.

(b) It is deemed that the term "or approved equal" is included after all Materials referred to in the Specifications or on the Drawings.

(c) Architect will initially judge the equivalency of proposed substitute Materials. Architect will make written recommendation of acceptance or rejection to Construction Manager and/or BPCA. Construction Manager and/or BPCA will then authorize Architect to issue to Contractor written approval or rejection of the substitution.

(d) If Contractor desires to use a substitute item, Contractor shall make application to Architect in writing in sufficient time (with regard to the progress of the Work, the period of delivery of the goods concerned and adequate time for Architect's review) stating and fully identifying the proposed substitute, cost changes (if any), and submitting substantiating data, samples, brochures of the item proposed. It is Contractor's responsibility to provide at its sole expense sufficient evidence by tests or other means to support any request for approval of substitutions.

(e) Prior to proposing any substitute item, Contractor shall satisfy itself that the item Contractor proposes is, in fact, equal to that specified and had been used satisfactorily in similar applications to the application proposed for the Work, for at least three years, that it will fit into the space allocated and within the load allocated for the same, that it affords comparable ease of operations, maintenance and service, that its appearance, longevity and suitability for the climate and use are comparable to that specified, and that the substitution requires no change in dimension or design of any other Work of Contractor, of any other contractor or in the time required for the performance thereof.

(f) The burden of proof that a proposed substitution is equal to a specified item shall be upon Contractor, who shall support its request with sufficient test data and other means to permit Architect to make a fair and equitable decision on the merits of the proposal. Any item by the manufacturer other than those cited in the Contract Documents, or of brand name or model number or of generic species other than those cited in the Contract Documents, will be considered a substitution.

(g) Acceptance of substitutions shall not relieve Contractor from responsibility for compliance with all the requirements of the Contract Documents. If, notwithstanding the provisions of subsection (e) above, changes in other parts of the Work or the work of other contractors are required by its substitutions, Contractor shall be responsible for the costs of any such changes including the cost of all design and redesign services related thereto incurred by the Architect and his consultants.

(h) The Contract Time shall not be extended by any circumstances resulting from a proposed substitution, nor shall Contractor be entitled to any compensation for any delay caused thereby or related thereto.

2.8 Quality and Labeling

All Materials furnished shall be new and the quality thereof shall be in accordance with the Contract Documents. When Materials are specified to conform to a given standard, the Materials delivered to the Site shall bear manufacturer's labels stating that the Materials meet such standard. The above requirements shall not restrict or affect BPCA's right to test Materials as provided in this Agreement.

ARTICLE 3 - COMMENCEMENT AND COMPLETION OF THE WORK

3.1 Commencement, Completion and Progress Schedule

(a) Contractor shall prepare and submit a progress schedule for the Work ("Progress Schedule for the Work") and agrees to be bound by and comply with the Work Completion Date and the Progress Schedule for the Project (as the Progress Schedule for the Project shall be updated pursuant to subsection (b)) and waives any right to charge or claim damages or any increased cost, charges or expenses against BPCA, Construction Manager, or Architect, for delays or disruptions from any cause whatsoever. Contractor's sole remedy as against BPCA, Construction Manager, or Architect for any delays or disruptions shall be as provided in Section 3.4 hereof. Notwithstanding the foregoing, the Work shall be completed by no later than [date] (the "Work Completion Date") with time being of the essence in respect of said Work 13 #26366880_v1

Completion Date, as more fully set forth in subsection (h) below; this Agreement shall terminate by [date] (the "Agreement Termination Date").

(b) The Progress Schedule for the Work shall be formatted in a detailed precedence-style critical path method, or such other format satisfactory to BPCA and Construction Manager and shall also (a) provide a graphic representation of all activities and events including float values that will affect the critical path of the Work, (b) incorporate and coordinate all pertinent information involving each phase of Work, and (c) identify dates that are critical to ensuring the timely and orderly completion of the work in accordance with the requirements of the Contract Documents, including the dates for Substantial Completion of each respective phase of the Work. The Progress Schedule for the Work shall be updated weekly, or at any other time at the request of Construction Manager or BPCA, and submitted to Construction Manager and BPCA for review and approval. Failure to submit any requested update shall constitute a material breach of this Agreement. The Contractor shall promptly give written notice of any actual or potential delays to BPCA and Construction Manager. After submission of the Progress Schedule for the Work, Construction Manager shall coordinate the Progress Schedule for the Work with the Progress Schedule for the Project. The Progress Schedule for the Work may be revised by Construction Manager from time to time.

(c) Contractor shall commence the Work upon receipt of a written Notice to Proceed signed by BPCA, and shall prosecute the Work diligently and in accordance with the time and place requirements of the Project as determined and directed by Construction Manager, by using such means and methods of construction as will assure that the Work will be performed hereunder in accordance with the Contract Documents and Progress Schedule for the Work, and to the satisfaction of BPCA, Architect, and Construction Manager.

(d) If, in the opinion of Construction Manager, Contractor falls behind the Progress Schedule for the Project then in effect, Contractor shall take whatever steps may be necessary to improve its progress and shall, if requested by Construction Manager, submit operational plans to demonstrate the manner in which the lost time may be regained. It is the responsibility of Contractor to maintain its schedule so as not to delay the progress of the Project or the schedules of other contractors. If Contractor delays the progress of its Work or the work of other contractors, it shall be the responsibility of Contractor to increase the number of workers, the number of shifts, the days of Work and/or, to the extent permitted by law, to institute or increase overtime operations, all without additional cost to BPCA, in order to regain any time lost and maintain the Progress Schedule for the Project then in effect as established by Construction Manager.

(e) If Contractor shall fail to complete the Work by the Work Completion Date, or within the time to which such completion may have been extended, BPCA may, at its option, withhold from any sums otherwise due and owing to Contractor hereunder, so much of the balance thereof as BPCA shall deem necessary to secure it against any costs, expenses, or damages which may be incurred by BPCA as a result of said failure, but any such withholding shall not be deemed to be a waiver of any rights hereunder, and Contractor shall be liable to and shall indemnify and hold BPCA harmless from any and all cost, expense or damage incurred by BPCA by reason of such failure.

(f) If Contractor shall neglect, fail or refuse to complete the Work on or before the Work Completion Date or any changes thereto in accordance with, or upon the expiration of, any proper extension granted by BPCA, Contractor agrees to pay to BPCA \$_____, not as a penalty, **but as liquidated** damages for loss of beneficial use of the Project, for each and every calendar day that the Contractor is in default. Default shall include abandonment of the Work by Contractor.

(g) Said amount of liquidated damages is agreed upon by and between Contractor and BPCA because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages which BPCA would sustain for loss of beneficial use of the Project in the event of delay in completion, and said amount is agreed to be the amount of damages sustained by BPCA and said amount may be retained from time to time by

BPCA. The foregoing liquidated damages are intended to compensate BPCA only for the loss of beneficial use of the Project. In addition, Contractor shall be liable to BPCA, to the fullest extent permitted by law, for whatever actual damages (other than actual loss of beneficial use) BPCA may incur as a result of any actions or 14 #26366880_v1

inactions of Contractor or its Subcontractors including, without limitation, interest expense and carrying costs, liabilities to other Contractors working on the Project or other third parties, job extension costs, and other losses incurred by BPCA. The provisions of this paragraph are exclusive to BPCA, and shall not accrue to other contractors or third parties.

(h) It is further agreed that time is of the essence for each and every portion of the Work. In any instance in which additional time is allowed for the completion of any Work, the new time of completion established by said extension shall be of the essence. Contractor shall not be charged with liquidated damages or any excess cost if BPCA determines that Contractor is without fault and that the delay in completion of the Work is due:

(1) to any preference, priority or allocation order duly issued by the Government of the United States or the State of New York;

(2) to an un contemplated cause beyond the control and without the fault of, or negligence of Contractor, and approved by BPCA, including, but not limited to, acts of God or of public enemy, fires, epidemics, quarantine, strikes, freight embargoes and unusually severe weather; and

(3) to any delays of Subcontractors or Materialmen occasioned by any of the causes specified in Subsections 1 and 2 of this paragraph.

(i) Notwithstanding the foregoing, and whether or not, at any given time, a Progress Schedule, or update thereto (as appropriate) has been submitted, the Work shall be completed by the Work Completion Date (with the period between commencement of the Work and the Work Completion Date being referred to herein as the "Term").

(j) Notwithstanding anything to the contrary, a schedule submitted by Contractor showing a time of completion earlier than that specified in the Contract shall not entitle Contractor to any additional compensation in the event the earlier time of completion is not realized.

3.2 Coordination with Other Contractors

Contractor shall coordinate the Work to be performed hereunder with the work of other contractors performing work for the Project in such manner as Construction Manager shall direct. Contractor shall indemnify and hold BPCA, Construction Manager and Architect harmless from any and all claims or judgments for damages, costs and expenses to which BPCA, Construction Manager or Architect may be subjected or which they may suffer or incur by reason of Contractor's failure to promptly comply with Construction Manager's directions. If Contractor notifies Construction Manager in writing that another contractor is failing to coordinate its work with the Work to be performed hereunder, Construction Manager shall promptly investigate the charge. If Construction Manager finds that charge to be true, it shall promptly issue such direction to the other contractor with respect thereto as the situation may require. BPCA, Construction Manager and Architect shall not, however, be liable for any damages suffered by Contractor by reason of the other contractor's failure to promptly comply with the directions so issued by Construction Manager or by reason of another contractor's default in performance. Should Contractor sustain any damage through any act or omission of any other contractor, Contractor shall have no claim against BPCA, Construction Manager or Architect for such damage but shall have a right to recover such damage from the other contractor, under a provision similar to a provision contained in the following sentence which is part of this Agreement and which has been or will be inserted in the contracts with the other contractors engaged in the Project.

Should any other contractor having or who shall hereafter have a contract with BPCA for the performance of work upon the Project sustain any damage through any act or omission of Contractor hereunder, Contractor agrees to reimburse such other contractor for all such damages and to indemnify and hold BPCA, Construction Manager and Architect harmless from all such claims. Any claim against a performance bond

surety made by any contractor shall be subordinated to any claim of BPCA then existing or that may arise in the future against such other contractor or its performance bond surety.15 #26366880_v1

3.3 Notice of Delay

Should Contractor be or anticipate being delayed or disrupted in performing the Work hereunder for any reason, including, without limitation, its financial condition or Contractor's general nonpayment of its debts as such debts become due, it shall promptly and in no event more than three (3) days after the commencement of any condition which is causing or is threatening to cause such delay or disruption notify Construction Manager in writing of the effect of such condition upon BPCA's Progress Schedule for the Project, stating why and in what respects the condition is causing or is threatening to cause delay, provided, however, that notwithstanding the above, if such delay or disruption, or anticipated delay or disruption, should be the result of any change or anticipated change in Contractor's financial condition, Contractor shall notify Construction Manager forthwith of such cause or anticipated cause. Failure to strictly comply with this notice requirement shall be sufficient cause to deny Contractor a change in schedule and to require it to conform to the Progress Schedule for the Project then in effect established by Construction Manager.

3.4 Extension of Time

(a) An extension of time under the Progress Schedule for the Project then in effect may be granted by BPCA subject to the provisions hereof upon written application therefor by Contractor. An application for an extension of time under the Progress Schedule for the Project then in effect must set forth in detail the nature of each cause of delay in the performance of the Work, the date or dates upon which each cause of delay began and ended and the number of days delay attributable to each such cause. After the application is submitted, Contractor shall supply any other data that Construction Manager may request.

(b) Contractor shall be entitled to an extension of time under the Progress Schedule for the Project then in effect for delays in the performance of the Work, if caused:

(1) solely by unanticipated acts or omissions of BPCA, Construction Manager or Architect; or

(2) by the unanticipated acts or omissions of other contractors or unanticipated causes beyond the control and without the fault or negligence of Contractor including, but not limited to, acts of God, acts of public enemy, acts of any Government body, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of Subcontractors or Materialmen arising from unforeseeable causes beyond the control and without the fault or negligence of both Contractor and such Subcontractors or Materialmen; provided, that Contractor shall have used its best efforts and diligently sought to have minimized any such period of delay, by taking whatever measures are necessary, including without limitation, if applicable, seeking alternate sources of Materials, other Subcontractors or other facilities in which to perform the required construction operations; and provided, further, that an application is made pursuant to the requirements of the immediately preceding paragraph.

ARTICLE 4 - CONTRACT PRICE

For the performance and completion of the Work, BPCA shall pay Contractor a lump sum amount of \$_____, (such sum is herein sometimes referred to as the "Contract Price"), which amount shall include any monies earned by or paid to Contractor prior to the execution of this Agreement, provided, that if the Contract Price shall be expressly revised by a Change Order in accordance with Article 9 hereof, the Contract Price shall thereafter mean the Contract Price as so revised. Contractor will submit appropriate Time Sheets in the form of Exhibit [x].16 #26366880_v1

ARTICLE 5 - METHOD, SCHEDULE AND TERMS OF PAYMENTS

5.1 Partial Payment

(a) In accordance with Requisitions (as defined in Section 5.2) submitted and approved as provided below for Work performed in accordance with this Agreement, Contractor shall be entitled to partial payment on account of the Contract Price in an amount equal to the value, as determined in accordance with the Trade Payment Breakdown (as defined in Section 5.3), of the portions of the Work completed and acceptable to BPCA and Construction Manager for purposes of such payment, less a retainage equal to ten percent (10%) of the total amount of all prior partial payments. Partial payments shall constitute advances against the Contract Price until final payment is made and accepted. No partial payment made, nor approval of a portion of the Work given for purposes of making a partial payment, shall constitute an acceptance of any Work not in accordance with the Contract Documents.

(b) Upon completion of fifty percent of the Work, Contractor may make written application to BPCA requesting reduction of the retainage set forth in Section 5.1(a) hereof. Approval of such reduction of retainage and the percentage to which the retainage shall be reduced is in the sole discretion of BPCA. If BPCA approves a reduction of retainage as herein described, BPCA shall so notify Contractor in writing. Any reduction of retainage pursuant to this paragraph (b) shall not be deemed to be a waiver of retainage requirements for future partial payments.

5.2 Requisitions

Applications for partial payments (“Requisitions”) and application for final payment (“Final Requisition”) shall be in the form previously supplied by BPCA and shall be submitted by Contractor to Construction Manager or its designee in five original copies in the manner hereinafter provided for the approval of BPCA and Construction Manager. Each Requisition shall be supported by such data substantiating Contractor’s right to payment as BPCA and Construction Manager may require.

5.3 Trade Payment Breakdown

Prior to the submission of the first Requisition, Contractor shall present to Construction Manager for approval a trade payment breakdown (the “Trade Payment Breakdown”) of the various portions of the Work, aggregating the Contract Price, prepared in such form as specified by BPCA and supported by such data to substantiate its correctness as Construction Manager may require. After approval by BPCA and Construction Manager, the Trade Payment Breakdown shall not be changed or revised in any way without the written consent of Construction Manager. The Trade Payment Breakdown, when approved by Construction Manager, shall be used only as a basis for Requisitions and shall not be considered as a basis for reducing or increasing the Contract Price.

5.4 Payment for Stored Materials

If approved in advance of delivery by BPCA and Construction Manager, payments will be made on account of 80% of the value of Materials not incorporated in the Work, but delivered and suitably stored at the Site or at some other offsite location agreed upon in writing by BPCA and Construction Manager. Such payments shall be conditioned upon submission by Contractor of bills of sale or other supporting documentation satisfactory to BPCA and Construction Manager to establish BPCA’s title to such Materials including applicable insurance and transportation to the Site for those Materials stored offsite. In the event that Contractor, with approval of BPCA, stores any Materials offsite, the conditions for payment of Material stored off-site shall include but not be limited to the following: (a) the Material shall be properly stored in a secured location approved by the BPCA and/or Construction Manager; (b) the Material will be covered under the BPCA’s builder’s risk policy subject to policy limits and restrictions; and (c) the Material may be inspected by the BPCA and /or Construction Manager to assure compliance with Contract Documents.17

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5.5 Receipts and Releases of Liens

With each Requisition, Contractor shall furnish its affidavit of payment and waiver of lien for Work done and Materials furnished through the date covered by the last preceding partial payment (the “Preceding Covered Date”) and shall furnish its affidavit certifying that all Subcontractors and Materialmen have been paid for Work performed and Materials furnished through the Preceding Covered Date except for any permitted retainage. BPCA may also require Contractor to attach to each Requisition (i) affidavits of payment and waivers of lien from all Subcontractors and Materialmen dealing directly or indirectly with Contractor for Work performed and Materials furnished through the Preceding Covered Date and/or (ii) the consent of the surety issuing the Payment Bond to such payment. BPCA may require Contractor to execute a waiver of lien at the time payment is made for a Requisition for all Work performed through the date of the Requisition in respect of which payment is being made.

In addition to the documents required to be furnished by the preceding paragraph, with the Final Requisition, Contractor shall furnish (y) its affidavit that there are no liens, claims or demands by, and that there is no indebtedness to, Subcontractors, Materialmen, laborers, other employees or third persons for which BPCA, Construction Manager, or Architect might in any way be responsible and (z) releases from all Subcontractors and Materialmen dealing directly or indirectly with Contractor. Should any such Subcontractor or Materialman fail or refuse to furnish such release, Contractor may be required to furnish a bond satisfactory to BPCA to indemnify it against any such lien, claim or demand. If any such lien, claim or demand remains unsatisfied after all payments are made to Contractor, Contractor shall refund to BPCA all monies that BPCA may be compelled to pay in discharging such lien, claim or demand including all costs, expenses and attorneys’ fees which BPCA may incur in connection therewith.

5.6 Time of Payment

Requisitions shall be submitted by Contractor to BPCA and Construction Manager by the seventh day of each calendar month for Work completed up to the last calendar day of the previous month or other day approved by BPCA, and payment shall be made on or about twenty days after BPCA receives the Requisition together with the documents required pursuant to Sections 5.2 and 5.5 hereof. Contractor shall be entitled to payment only in the amount approved by BPCA, and Construction Manager with respect to such Requisitions, each of which must be signed by BPCA, and Construction Manager before payment is made. The value of any Work included in a Requisition for partial payment which is found unacceptable by BPCA, or Construction Manager may be deducted from that or any subsequent Requisition.

5.7 Reduction of Retainage

Upon the issuance of a Certificate of Substantial Completion, as defined in Section 8.6, Contractor shall submit a Requisition in an amount equal to the Contract Price less five percent (5%) of the total contract amount (including all approved change orders and pending change order proposals), and less the total amount of all prior payments. Upon approval of the same by BPCA, BPCA shall pay to Contractor the amount approved less any amount which BPCA is entitled to withhold hereunder.

5.8 Final Payment

(a) The final balance due Contractor under this Agreement shall be payable to Contractor by BPCA, as final payment hereunder, within thirty days after all of the following have taken place:

- (1) Contractor’s Final Requisition has been submitted by Contractor and approved by BPCA, and Construction Manager;
 - (2) the affidavit provided for in Section 5.5 hereof has been submitted by Contractor, and any other documents or actions expressly specified in the Contract Documents as preconditions to final payment have been submitted or completed; and
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(3) any inspections or approvals with respect to any of the Work that BPCA deems legally required or appropriate by governmental authorities or by the applicable Board of Fire Underwriters have been performed or obtained.

(b) The acceptance of final payment shall constitute a waiver of all claims by Contractor.

5.9 Release and Consent of Surety

Notwithstanding any other provision of this Agreement, before final payment pursuant to Section 5.8 shall become due pursuant hereto or before reduction of retainage, Contractor shall submit to BPCA a consent of surety to final payment or reduction of retainage in a form and substance acceptable to BPCA.

5.10 BPCA's Right to Audit and Inspect Records

Contractor shall maintain and shall keep for a period of at least six years after the date of Final Acceptance of the Work, pursuant to Section 8.7, all records and other data relating to the Work. BPCA or its designee shall have the right to inspect and audit all records and other data of Contractor relating to the Work at any time and from time to time until the end of such six year period. Contractor shall promptly respond to any inquiries of BPCA or any representative of BPCA arising out of any such inspection or audit.

5.11 Withholding of Payments

(a) BPCA may withhold payment or, because of subsequently discovered evidence, may nullify the whole or any part of any previously approved Requisition to such extent as may, in the judgment of BPCA, be necessary:

- (1) to assure payment of just claims or liens of any persons supplying labor or Materials for the Work;
- (2) to protect BPCA from loss due to defective Work or to reimburse BPCA, Construction Manager and Architect for fines on account of non-compliance with applicable laws, rules and regulations, including rules promulgated by the Office of Safety & Health Administration;
- (3) to protect BPCA from loss due to death or injury to persons or damage to the Work or property of BPCA, other contractors or others caused by the act or neglect of the Contractor;
- (4) in the event that there is reasonable evidence that the Work will not be completed for the unpaid balance of the Contract Price;
- (5) in the event that there is reasonable evidence that the Work will not be completed within the time provided; or
- (6) in the event that Contractor persistently fails to perform the Work in accordance with the Contract Documents.

In any of such events, BPCA shall have the right to apply any such amounts so withheld in such manner as BPCA may deem proper to satisfy such claims, to secure such protection, to complete the Work or to compensate BPCA for any loss suffered by reason of Contractor's delay. Such application shall be deemed payment for the account of Contractor. In the event that BPCA gives Contractor notice that it intends to make such application, Contractor shall be estopped from disputing liability or the amount of liability unless, within three days after receipt of such notice, it indicates to BPCA in writing that it is not liable or that the amount of its liability is different from that set forth in the notice.

(b) The provisions of this Section 5.11 are solely for the benefit of BPCA, and any action or non-action by BPCA shall not give rise to any liability on the part of BPCA. Failure to 19 #26366880_v1

so act shall not be deemed a waiver of any present or future claims of BPCA.

ARTICLE 6 – CONTRACTOR

6.1 Superintendence by Contractor, Discipline and Employee Skills

Contractor shall provide a competent construction superintendent to be in charge of the Work. The construction superintendent shall devote full time to the Work, shall be present at the Site during the time the Work is required to be performed and shall have full authority to accept instructions, make decisions and act for Contractor at all times. If at any time the construction superintendent is not satisfactory to BPCA or Construction Manager, Contractor shall, if requested by BPCA, replace such superintendent with another satisfactory to BPCA. Contractor shall enforce strict discipline and good order at all times among Contractor's employees and all Subcontractors. Contractor shall not engage any employee not skilled in the task assigned.

6.2 Representations and Warranties

Contractor represents and warrants that:

- (a) Contractor is financially solvent and is experienced in, and competent to perform the Work and has the staff, manpower, equipment, Subcontractor, and suppliers available to complete the Work within the time specified in the Agreement for the Contract Price;
- (b) Contractor is familiar with all Federal, State or other laws, ordinances, orders, rules and regulations, which may in any way affect the Work;
- (c) any temporary and permanent Work required by this Agreement can be satisfactorily constructed, and such construction will not injure any person or damage any property; and
- (d) Contractor has carefully examined the Contract Documents and the Site and, from Contractor's own investigations, is satisfied as to the nature and location of the Work, the character, quality and quantity of surface and subsurface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the Work, the general and local conditions, and all other conditions or items which may affect the Work. Prior to submitting its bid for performance of the Work, Contractor notified BPCA or Construction Manager in writing of any discrepancies or errors in the Contract Documents.

6.3 Verifying Dimensions and Site Conditions

Before proceeding with the Work, Contractor will check all previous and surrounding work and determine the correctness of the same; failure on its part to detect or report discrepancies will relieve BPCA of liability from any and all claims to recover cost, expense, loss or damage resulting therefrom. Contractor shall take, determine, investigate and verify all field measurements, dimensions, field construction criteria and Site conditions for the performance of the Work and shall check and coordinate the information contained in the Contract Documents and the boring logs which shall be available for inspection with the requirements of the Work. Contractor shall be responsible for determining the exact location of and to verify the spatial relationships of all Work. If any conflicts or discrepancies are found in the Contract Documents or if Contractor has any questions concerning the foregoing, it shall immediately notify Construction Manager and shall thereafter perform the Work in accordance with the directions of Construction Manager.

6.4 Copies of Contract Documents for Contractor

BPCA shall furnish to Contractor, without charge, two sets of the Contract Documents. Any sets in excess of the number mentioned above may be furnished to Contractor at the cost of reproduction and mailing.

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6.5 Meetings

Contractor shall attend all meetings as directed by BPCA or Construction Manager, including meetings set forth in Section 26.3, and shall be represented at such meetings by a person having knowledge of the Work and authorized to act for Contractor at all times. If at any time such person is not satisfactory to BPCA or Construction Manager, Contractor shall, if requested by BPCA, be represented by another person satisfactory to BPCA, having knowledge of the Work and authorized to act for Contractor at all times.

6.6 Related Work

Contractor shall examine the Contract Documents for related work to ascertain the relationship of such work to the Work under the Contract Documents.

6.7 Surveys and Layout

Unless otherwise expressly provided in this Agreement, Owner shall furnish Contractor survey points necessary for the Work, but Contractor shall lay out the Work.

6.8 Reports and Access

Contractor shall furnish BPCA and Construction Manager with daily and monthly manpower reports on forms provided by BPCA or Construction Manager and such other reports as may be required by BPCA or Construction Manager. BPCA, Construction Manager and Architect shall have full and free access to the shops, plants and factories of Contractor, any Materialmen and Subcontractors to inform themselves as to the progress of the Work.

6.9 Financial Information

Until completion of the Work, Contractor agrees to notify BPCA forthwith in writing of any event which has caused or is reasonably anticipated to cause a material adverse change in Contractor's business or financial condition from that shown in the then most recent financial statements furnished by Contractor to BPCA. Contractor has furnished to BPCA financial statements regarding the period from [date] to [date]. Contractor agrees to furnish to BPCA, at BPCA's request from time to time hereafter, quarterly, or annual financial statements (which shall be audited, if such is the practice of Contractor for financial statements covering the applicable period) and such additional information as BPCA shall deem necessary or desirable to satisfy itself of Contractor's continuing ability to complete the Work.

ARTICLE 7 - CONTRACT ADMINISTRATION

7.1 Architect's Responsibilities and Functions

Contractor acknowledges that the role of Architect with respect to the Work shall be as specified in this Agreement. Contractor will comply with the instructions of Architect pursuant hereto.

Architect's duties and services shall in no way supersede or dilute Contractor's obligation to perform and complete the Work in conformity with the Contract Documents.

7.2 Construction Manager's Responsibilities and Functions

(a) Construction Manager shall coordinate and schedule construction to insure that the completion of the Project is on schedule and that the Project is well constructed in accordance with the Contract Documents.

Contractor acknowledges that the role of Construction 21 #26366880_v1

Manager with respect to the Work shall be as specified in this Agreement. Contractor hereby agrees to comply with the directions and instructions of Construction Manager.

(b) Construction Manager shall call for meetings of Contractor, other contractors, Subcontractors and Materialmen as necessary for the proper coordination of the Work. Such meetings shall be held at the Site on regular working days, during regular working hours, unless otherwise directed by BPCA. Attendance shall be mandatory for all parties notified to attend.

7.3 Scope of Responsibility of Architect and Construction Manager

In no event shall any act or omission on the part of the Construction Manager or Architect relieve Contractor of its obligation to perform the Work in full compliance with the Contract Documents. Neither Architect nor Construction Manager will be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and neither will be responsible for Contractor's failure to carry out the Work in accordance with the Contract Documents or the failure to fulfill any of the requirements of this Agreement.

ARTICLE 8 - INSPECTION AND ACCEPTANCE

8.1 Access to the Work

BPCA, Construction Manager, Architect or their authorized representatives shall at all times have access to and the right to observe the Work and all facilities where the Work or any part thereof is being fabricated or stored, and Contractor shall provide proper facilities for such access and observation.

8.2 Notice of Required Inspections and Tests

If the Contract Documents, or any laws, rules, ordinances or regulations, require that any Work be inspected or tested, Contractor shall give BPCA, Construction Manager and Architect at least five days prior written notice of readiness of the Work for inspection or testing and the date fixed for such inspection or testing.

8.3 Additional Inspections and Tests

(a) Whenever, in the opinion of BPCA, Construction Manager or Architect, it is desirable to require inspection or testing of the Work or its individual components in addition to any such testing which may be originally included in the Work, they shall have authority to do so whether or not such Work be then fabricated, installed, covered or completed. If such inspection or testing reveals a failure of the Work to comply (1) with the requirements of the Contract Documents, or (2) with respect to the performance of the Work, with laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, Contractor shall bear all costs thereof, including Architect's and Construction Manager's additional services made necessary by such failure; otherwise BPCA shall bear such costs, and an appropriate Change Order shall be issued.

(b) In the event that any item of the Work fails inspection or testing, BPCA, Architect or Construction Manager may require inspection or testing of any or all of the other items of the Work at Contractor's cost and expense.

8.4 Uncovering of Work

(a) If any Work shall be covered or concealed contrary to the request of BPCA, Architect or Construction Manager, such Work shall, if required by BPCA, Architect or Construction Manager, be uncovered by examination, inspection or testing. Any examination, testing or inspection shall not relieve Contractor of the responsibility to maintain quality control over the Work. If any test results are below specified minimums, BPCA may order additional testing. The cost of such additional examination, inspection or testing, any additional professional services required, and any other expenses incurred by BPCA as a result of such 22

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examination, inspection or testing shall be borne by Contractor.

(b) In the event that a typical detail fails inspection or testing, BPCA, Architect or Construction Manager may require inspection or testing of any or all of other such typical details at Contractor's cost and expense.

8.5 Correction of Work

Any Work not approved by BPCA, Architect and Construction Manager shall immediately be reconstructed, made good, replaced or corrected by Contractor including all Work of other contractors destroyed or damaged by such removal or replacement. Rejected material shall be removed immediately from the Site. Acceptance of Materials and workmanship by BPCA shall not relieve Contractor from Contractor's obligation to replace all Work which is not in full compliance with the Contract Documents.

8.6 Certificate of Substantial Completion

Upon their receipt of written notice from Contractor stating that in Contractor's estimation the Work has been substantially performed in conformity with the Contract Documents, Architect and/or Construction Manager shall perform an inspection for the purposes of determining whether the Work has been so performed, commencing such inspection within ten (10) days of receipt of such notice and completing it with all due diligence. When Architect and/or Construction Manager find upon inspection that, to the best of their knowledge and belief, the Work is so performed, they shall prepare and deliver to BPCA for delivery to Contractor a certificate specifying the date of substantial completion of the Work for purposes of this Agreement ("Certificate of Substantial Completion") and a punch list of items of Work remaining to be completed prior to the completion of the Work.

The delivery of a Certificate of Substantial Completion shall not terminate or alter Contractor's obligation under this Agreement to complete the Work in conformity with the Contract Documents and to fulfill all terms and conditions of this Agreement.

8.7 Completion of Work and Acceptance

Upon their receipt of written notice from Contractor stating its belief that the Work has been fully performed in conformity with the Contract Documents, and confirming that Contractor has completed any items of Work previously noted to it by Architect and Construction Manager as not having been acceptably completed in any punch list or otherwise, Architect and Construction Manager shall perform an inspection for purposes of determining whether the Work has been so performed. Architect and Construction Manager shall commence such inspection within ten (10) days of receipt of such notice and shall pursue and complete it with all due diligence. When BPCA and Construction Manager find upon inspection that, to the best of their knowledge and belief, the Work has been so performed, they shall prepare a certificate of final completion, and, upon delivery by BPCA to Contractor of said certificate, the Work shall be deemed to be finally accepted by BPCA (such delivery of the certificate of final completion to Contractor is hereinafter referred to as "Final Acceptance").

Final Acceptance shall not terminate or alter Contractor's obligation under this Agreement to complete the Work in conformity with the Contract Documents and to fulfill all terms and conditions of this Agreement.

ARTICLE 9 - CHANGES IN THE WORK

9.1 Change Orders

(a) BPCA may, at any time, in any quantity or amount, without notice to the sureties and without invalidating or abandoning the contract, order Extra Work. Notwithstanding the terms of subsection 3.1(a) hereof, BPCA may, but shall be under no obligation to, change the manner, sequence or method of performance of the Work or direct acceleration of the Work and Contractor shall, therefor, be entitled to a Change Order (as defined in Section 9.1(b)) provided that such change or acceleration was not ordered to maintain the Progress Schedule for the 23 #26366880_v1

Project, the Progress Schedule for the Work or to coordinate the Work with the work of other contractors. Contractor shall be obligated to perform changed Work promptly in conformity with any Change Order or Field Order issued in accordance herewith and may not suspend or otherwise refuse to perform the Work contained therein or any other aspect of the Work required under this Agreement because a Change Order has yet to be fully executed.

(b) "Change Order" shall mean a written order issued by the Authority to Contractor after execution of this Agreement, authorizing or requiring:

- (i) Extra Work,
- (ii) items which were erroneously deleted or omitted from the Work,
- (iii) items which were included in the Work but were subsequently deleted,
- (iv) an extension or decrease of time to complete Work,
- (v) an increase or reduction in the payment to Contractor, or
- (vi) any other change in the Contract Documents or in the sequence of performing or phasing of the Work.

(c) All Change Orders shall be prepared, signed and issued by Construction Manager at the instruction of BPCA, and to be valid, must be countersigned by BPCA and Contractor.

9.2 Change in Contract Price and Time

(a) The Contract Price will not be revised due to any change of the Work except as and to the extent expressly provided in the Change Orders. The amount by which the Contract Price is to be increased or decreased by any Change Order shall be determined by BPCA and Construction Manager by one or more of the following methods:

- (1) by accepting an amount agreed upon by BPCA and Contractor;
- (2) by applying the applicable unit prices and alternates where the Work involved is covered by unit prices in this Agreement;
- (3) by receiving from Contractor a detailed breakdown satisfactory to BPCA and Construction Manager, including actual time slips and invoices, itemizing the direct cost of labor and Materials to perform the changed Work and adding thereto fifteen percent (15%) to cover profit and all indirect and overhead costs, except that where the changed Work is performed by a Subcontractor or Materialman, the direct cost of labor and Materials to perform the changed Work plus fifteen percent (15%) for profit and all indirect and overhead costs to Subcontractor or Materialman and an additional sum for profit and all indirect and overhead costs of Contractor equal to ten percent (10%) of the first \$100,000, five percent (5%) of the second \$100,000 and three percent (3%) of any cost in excess of \$200,000 to Contractor. No allowance shall be paid on the premium portion of overtime pay. Where the changed Work involves both an increase and a reduction in any contract Work, the above percentage override shall be applied only on the amount, if any, by which the cost of the increase exceeds the cost of the reduction.
- (4) by receiving from Contractor a true copy of its bid work sheets to determine the contract price for the elimination of any contract Work. The amount of reduction shall not include the overhead or profit of Contractor for the eliminated Work. Should Contractor fail to furnish BPCA with such bid work sheets, then Construction Manager shall determine the amount of the reduction. The determination of Construction Manager shall be final and binding unless erroneously or fraudulently arrived at, or arbitrary and capricious;

- (5) by adding to the Contract Price only the amount of the premium portion of overtime pay resulting from an acceleration of the Work; or
- (6) by adding to the Contract Price, the actual incremental labor and equipment costs incurred by the Contractor resulting from a change in the manner, sequence or method of performing the Work.
- (b) The compensation specified in a Change Order shall constitute a release and full payment for the Extra Work covered thereby and for any delay and disruption cost or expense occasioned by reason of said change in the Work.
- (c) No time extension shall be granted Contractor by reason of the issuance of any Change Order unless it is expressly stated therein.

9.3 Field Orders

Construction Manager shall have the authority to order minor changes in the Work by the issuance of written field orders ("Field Orders"), which may be issued without prior approval by BPCA. Field Orders must be countersigned by Contractor. Minor changes in the Work for purposes of this Section shall mean only changes which do not necessitate or warrant any revision in the Contract Price in excess of \$5,000 or affect the time of performance of Contractor's Work, any change in the basic character or design of the Project, or deviation from design standards established for the Project. Except as otherwise provided in the preceding sentence relating to an increase in the Contract Price, no claim for an increase in the Contract Price may be based upon any Field Order. If Contractor, on receipt of a Field Order, claims that the change of Work involved necessitates a Change Order, it shall proceed in accordance with the Field Order under protest and notify BPCA immediately of its claim for additional compensation for Extra Work pursuant to Article 14.

9.4 Changed Conditions

- (a) BPCA assumes no responsibility for the correctness of any boring or other subsurface information and makes no representation of any kind regarding subsurface conditions and test borings, reports, rock cores, foundation investigation and topographical maps which may be made available to Contractor.
- (b) Contractor shall promptly, and before such conditions are disturbed, notify Construction Manager of: (1) subsurface or latent physical conditions differing materially from those indicated in the Contract Documents, or (2) unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Agreement. Construction Manager shall promptly investigate the conditions, and if it finds that such conditions do materially so differ and cause an increase or decrease in Contractor's cost of, or the time required for, performance of any part of the Work under this Agreement, Contractor shall be paid in the manner provided for payment with respect to any Change Order and receive, if warranted, a time extension.
- (b) No claim of Contractor under this clause shall be allowed unless Contractor has given the notice required in subsection (a) above.

ARTICLE 10 - SUBCONTRACTS AND PURCHASE ORDERS

10.1 Selection of Subcontractors and Materialmen and Approval of Subcontracts and Purchase Orders

- (a) Contractor shall submit to Construction Manager, within 21 calendar days of Notice to Proceed, the names of all persons with whom it has contracted or intends to contract or hereafter contracts with respect to the Work.
- (b) Except as specifically provided herein, Contractor shall not enter into any Subcontracts or issue any Purchase Orders (as hereinafter defined) to any Materialmen in 25 #26366880_v1

connection with the performance of Contractor's obligations hereunder without the prior written consent of BPCA to the use of each such Subcontractor or Materialman, and to the agreement to be entered into between Contractor and any such Subcontractor or Materialman. Contractor shall inform BPCA in writing of any interest it may have in a proposed Subcontractor or Materialman. No such consent by BPCA, or employment, contract, or use by Contractor, shall relieve Contractor of any of its obligations hereunder nor may BPCA be held responsible in any way for the performance of a Subcontractor or Materialman to whom BPCA gave its consent.

(c) Contractor shall be responsible for the performance of the Work of any Subcontractors or Materialmen engaged, including the maintenance of schedules, coordination of their Work and resolutions of all differences between or among Contractor and any Subcontractors. It is expressly understood and agreed that any and all Subcontractors or Materialmen engaged by Contractor hereunder shall at all times be deemed engaged by Contractor and not by BPCA.

(d) Upon the request of BPCA, Contractor shall cause any Subcontractor or Materialman employed by the Contractor in connection with this Agreement to execute a copy of the Agreement wherein such Subcontractor or Materialman shall acknowledge that it has read and is fully familiar with the terms and provisions hereof and agrees to be bound thereby as such terms and provisions are or may be applicable to such Subcontractors or Materialmen.

(e) Contractor shall submit to BPCA promptly following execution, three copies of every revision, amendment, modification or cancellation executed or issued by Contractor with respect to any Subcontractor or Materialman. BPCA is not obligated to make payment on account of Work performed or Materials furnished by a Subcontractor or a Materialman under a Subcontract or contract for construction supplies or Materials (hereinafter "Purchase Order(s)") unless there shall have been filed with BPCA prior to the submission of a Requisition for each payment, three copies of such Subcontract or Purchase Order containing the provisions required by this Agreement to be contained therein, except as may otherwise be specified by BPCA with respect to Purchase Orders for minor purchases.

10.2 Access by BPCA and Others

Contractor shall include a provision in all Subcontracts and Purchase Orders stating that, to permit verification of Contractor's costs, BPCA shall have the right to have its representatives inspect and audit the books of account and records of the Subcontractor and Materialmen, including the right to make excerpts from such books and records. All payments by Contractor to a Subcontractor or Materialman shall be by check specifically indicating that payment is attributable to this Agreement and identifying the invoice(s) for which payment is being made. Contractor shall include a provision in all Subcontracts and Purchase Orders that will enable representatives of the State of New York, Construction Manager and BPCA, as the case may be, to obtain access during working hours to the appropriate books of account and records of the Subcontractors or Materialmen relating to the Work to determine if there is compliance with the requirements of law or this Agreement.

10.3 Retainage

Contractor may provide for a retainage under any of its Subcontracts or Purchase Orders provided that where a Subcontract or Purchase Order provides for a retainage, the retainage shall be no greater in percentage than that provided for under Sections 5.1 or 5.7 hereof with respect to Contractor itself, unless otherwise approved in writing by BPCA. Contractor shall submit with each Requisition a statement setting forth the amounts of all retainage, if any, under its Subcontracts and Purchase Orders.

10.4 Miscellaneous

(a) Contractor shall be fully responsible for the work, acts and omissions of Subcontractors and Materialmen, and of persons either directly or indirectly employed by Subcontractors and Materialmen.

(b) Contractor's use of Subcontractors and Materialmen shall not diminish Contractor's obligation to complete the Work in accordance with the Contract Documents. 26 #26366880_v1

Contractor shall control and coordinate the work of Subcontractors and Materialmen.

(c) Nothing contained in this Agreement shall create any contractual relationship between Subcontractors or Materialmen and BPCA, Construction Manager or Architect. Nothing in this Section shall obligate BPCA to pay or to see to the payment of any sums to any Subcontractor or Materialmen.

(d) Contractor shall include a provision in all Subcontracts and Purchase Orders exceeding \$50,000, requiring the Subcontractor or Materialman, if requested by BPCA, until the Subcontractor or Materialman finishes its portion of the Work, to deliver to Contractor unaudited and, if available, audited financial statements of the Subcontractor or Materialman similar to the obligation of Contractor under Section 6.8 and promptly upon receipt thereof Contractor shall deliver copies thereof to BPCA.

ARTICLE 11 - ASSIGNMENT

11.1 No Assignment of Duties

Contractor shall not assign this Agreement or the performance of any obligations of Contractor under this Agreement, nor enter into any Subcontract in respect of the Work or any part thereof except in compliance with Article 10 hereof and with the prior written consent of BPCA, and each and every such assignment, Purchase Order and Subcontract without such compliance and consent shall be void and shall revoke and annul this Agreement.

11.2 No Assignment of Monies

Contractor shall not assign any monies payable hereunder nor execute and deliver any order for payment unless Contractor and the assignee shall have complied with the following terms and conditions:

(a) the assignee shall be a commercial bank or finance company regularly engaged in the business of provided financing to construction contractors and shall be providing such financing to Contractor;

(b) the assignee shall, simultaneously with the assignment, execute and deliver to BPCA an undertaking, in favor of BPCA, in form and substance satisfactory to BPCA, providing that:

(1) assignee will cause Contractor to apply for trust purposes, as defined in New York Lien Law Article 3-A (the "Lien Law"), all funds advanced by assignee to Contractor;

(2) assignee will file a copy of the assignment, containing the covenant required by the Lien Law, with the County Clerk of New York County and the head of the agency having charge of the underlying project;

(c) the assignee shall agree with BPCA in writing that BPCA and Contractor may modify any of the terms of this Agreement, including any of the terms of payment, without the consent of assignee;

(d) the assignee shall agree with BPCA in writing that after the effective date of the assignment, BPCA may make payment directly to any Subcontractor or Materialman without any liability to the assignee;

(e) the assignee shall agree with BPCA in writing that the assignee shall require and cause Contractor to keep his books and records in the form and manner described in New York Consolidated Laws Service Lien Law Article 3-A Section 75; and

(f) the assignee shall agree with BPCA in writing that the assignee will indemnify and hold BPCA harmless from and against any loss, claim or expense incurred as a result of any 27 #26366880_v1

failure of performance in accordance with the terms of such undertaking.

11.3 Assignment by BPCA

This Agreement or any rights of BPCA under this Agreement, including any guaranties or warranties of workmanship or material, may at any time be assigned by BPCA to the State of New York or any political subdivision, public corporation or agency of the State.

ARTICLE 12 - MECHANICS' LIENS AND CLAIMS

If any mechanic's lien or other claim shall be filed for or on account of the Work, Contractor shall discharge such lien or claim within thirty days of receiving written notice of such lien or other claim.

ARTICLE 13 – INSURANCE AND CONTRACT SECURITY

13.1 Insurance

(a) Contractor shall procure and maintain all of the insurance required under this Article 13 until Final Acceptance of the Work, except with respect to Completed Operations Coverage, as described in 13.1(f)(3) below.

(b) Contractor shall not commence physical performance of the Work at the Site until Contractor has obtained, and required each Subcontractor to obtain, all the insurance required under this Article and until it has furnished to BPCA the certificate or certificates of insurance required by Section 13.1(c) hereof.

(c) Contractor shall furnish to BPCA, before or upon execution of this Agreement, attention: [name], a certificate or certificates of the insurance required under this Article and, upon BPCA's request, certified copies of the original policies of insurance, within the time period required by BPCA and before commencing physical performance of the Work at the Site. Such certificate or certificates shall be in form satisfactory to BPCA, shall list the various coverages and shall contain, in addition to any other provisions required hereby, a provision that the policy shall not be changed, canceled or reduced and that it shall be automatically renewed upon expiration and continued in force until two years after Final Acceptance unless BPCA is given 90 days' written notice to the contrary. Such policies and certificates should name as additional insureds BPCA, Battery Park City Parks Conservancy Corporation (the "Conservancy"), the State of New York, Construction Manager, and Architect.

(d) All insurance required to be procured and maintained must be procured from insurance companies which have a financial rating by A.M. Best Company as published in the most current key rating guide of "A-X" or better and which are authorized to do business in the State of New York.

(e) If at any time any of the required insurance policies should be canceled, terminated or modified so that insurance is not in effect as required, then, if BPCA shall so direct, Contractor shall suspend performance of the Work. If the Work is not suspended then BPCA may, at BPCA's option, obtain insurance affording coverage equal to that required, the cost of such insurance to be payable by Contractor to BPCA.

(f) Contractor and each Subcontractor shall secure in a form satisfactory to BPCA:

(1) Worker's Compensation and Employer's Liability Insurance, including United States Longshoreman & Harbor Workers ("USL & H") and Jones Act Coverages, during the Term for the benefit of such employees as are required to be insured by the applicable provisions of law and voluntary compensation for employees excluded from statutory benefits. Employer's Liability Insurance and benefits resulting from disease shall

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not be less than an annual aggregate amount of \$_____ for each consecutive 12-month period.

(2) Disability Benefit Insurance during the life of this Agreement for the benefit of such employees as are required to be insured by the applicable provisions of law.

(3) Commercial General Liability Insurance as follows:

Standard commercial general liability insurance policy with contractual, products and completed operations and explosion, blasting, collapse, excavation and underground damage liability coverages, under the occurrence policy format, issued to and covering the liability of Contractor for all the Work and operations relating thereto and all obligations assumed by Contractor under this Agreement including, but not limited to indemnity obligations in an amount which shall not be less than the following limits:

Combined Single Limits, Bodily Injury
and Property Damage Liability

\$_____ per each occurrence and \$_____ in the aggregate.

The completed operations coverage shall continue in force until three years after Final Acceptance of the Work and shall contain, in addition to any other provisions required hereby, a provision that the policy shall not be changed, canceled or reduced. As a condition precedent to the making of Final Payment, Contractor shall furnish BPCA with a certified copy of the completed operations policy.

(4) Automobile Liability Insurance as follows:

A policy covering the use in connection with the Work of all owned, non-owned and hired vehicles bearing license plates, or under the circumstances that such vehicles are being used they are required by the Motor Vehicle Laws of the State of New York to bear license plates. The coverage under such policy shall not be less than the following limits:

Combined Single Limits,

Bodily Injury and Property Damage Liability

\$_____ per each occurrence.

(5) Marine Protection and Indemnity ("P&I") insurance of not less than [amount] per occurrence, if Contractor or any of its Subcontractors utilizes floating equipment, barges or floats, or performs marine-related construction, covering any and all claims for personal injury, death and property damage arising out of or in connection with this Agreement.

(6) Pollution Liability Insurance, on an occurrence basis, providing coverage for bodily injury liability, property damage or environmental damage caused by pollution conditions with a limit of liability of not less than [amount] per occurrence and in the aggregate. The policy shall include coverage for environmental clean-up on land, in air and on water. The policy shall include coverage for completed operations for two (2) years after the completion of the performance of the Work, gradual and sudden and accidental pollution coverage, with a time element of no less than seven (7) days' notice and thirty (30) days' reporting. The policy shall not contain a sunset provision, or any other provision, which would prohibit the reporting of a claim and the subsequent defense and indemnity that would normally be provided by the policy. The policy shall provide 29 #26366880_v1

transportation coverage for the hauling of hazardous materials from the Project Site to the final disposition location.

(7) Vessel Pollution Liability Insurance, on an occurrence basis, providing coverage for bodily injury liability, property damage or environmental damage caused by pollution conditions, emanating from any floating equipment, barges or floats, utilized by Contractor or Subcontractors in the performance of Marine related construction, with a limit of liability of not less than [amount] per occurrence and in the aggregate. The policy shall include coverage for environmental clean-up on land, in air and on water.

(8) Umbrella Liability Insurance, excess of general liability, automobile liability, Protection and Indemnity ("Marine Liability"), vessel pollution and Employer's Liability, in an amount of not less than [amount].

(g) The insurance required under subsections 13.1(f)3, 4 and 5 shall be of a type which shall protect Contractor and Subcontractors, respectively, against damage claims which may arise from operations under this Agreement, whether such operations be by the insured or by anyone directly or indirectly employed by the insured. Each of the aforesaid policies shall provide that the insurance company or an attorney approved and retained by the insurance company shall defend any suit or proceeding against BPCA or any officers, agents or employees of BPCA whether or not such suit is groundless, false or fraudulent. Notwithstanding the foregoing, BPCA shall have the right to engage its own attorneys for the purpose of defending any suit or proceeding against it or its respective officers, agents or employees, and, in such event, Contractor shall, indemnify BPCA for all attorneys' fees and disbursements and other costs incurred by it arising out of, or incurred in connection with, any such defense. The said insurance shall name BPCA, the Conservancy, the State of New York, Construction Manager and Architect as additional insureds as respects this location and shall, where applicable, be written on an occurrence basis and shall contain a provision that it is primary and that any similar insurance which BPCA, the Conservancy, the State of New York, Construction Manager, Architect, Contractor or Subcontractor elect to carry for their own benefit is secondary or excess and not contributing insurance.

(h) BPCA, at BPCA's cost and expense, may, at its sole option, procure and maintain such insurance as shall in the opinion of BPCA, protect BPCA from contingent liability of BPCA to others for damages arising from bodily injury, including death and property damages which may arise from operations under this Agreement. The procurement and maintenance of such insurance by BPCA shall not in any way be construed or be deemed to relieve Contractor from, or to be a limitation on the nature or extent of, such obligations and risk.

(i) BPCA shall, at all times during the period of construction and until completion and Final Acceptance of the Work procure and maintain at the cost and expense of BPCA "Builders Risk" insurance, or its functional equivalent, against direct physical loss or damage to the Work and on all Materials to be made a part of the Work in the names of BPCA, Construction Manager, Contractor and Subcontractors, said amount of insurance to be procured and maintained on a one hundred percentage (100%) completed value basis on the insurable portion of the Work, which insurance shall contain a deductible provision for all losses except flood and earthquake in the amount of \$10,000 and a deductible provision for flood and earthquake in the amount of \$10,000. BPCA recognizes that the deductible applicable to flood and earthquake may be greater than \$10,000 due to insurance market conditions and shall notify Contractor if such deductible is greater than \$10,000. Losses up to and including the amounts of such deductible provisions shall be borne by Contractor. The insurance specified above may, in certain instances, include other parties as named insureds, as the interests of such parties may appear. Loss, if any, is to be made adjustable with and payable to BPCA on behalf and for the named insureds as the interests of such insureds may appear. BPCA shall, in BPCA's sole discretion, have power to adjust and to settle with the insureds any loss or claim under such insurance. The above is not intended to be a complete, full or accurate description of the coverage provided by the policies of insurance, copies of which are on file with BPCA. This subsection (i) is not intended to create or give any

rights to Contractor or Subcontractors other than those which may be made available to such Contractors or Subcontractors under the terms of such policies. BPCA assumes no obligation to obtain insurance other than that evidenced by said policies. Contractor and Subcontractors shall not violate or permit to be violated any term or 30 #26366880_v1

condition of such policies and shall at all times satisfy the safety requirements of BPCA and of the insurance companies issuing the aforementioned policies. The Contractor shall, upon notification by BPCA, obtain such insurance at BPCA's expense on a date determined by BPCA, which date shall not be less than thirty (30) days after notice to Contractor of such determination by the BPCA.

13.2 Effect of Procurement of Insurance

Neither the procurement nor the maintenance of any type of insurance by BPCA or Contractor shall in any way be construed or be deemed to limit, discharge, waive or release Contractor from any of the obligations and risks impressed upon Contractor by this Agreement or to be a limitation on the nature or extent of such obligations and risks.

13.3 Contract Security

Contractor shall, if it already has not done so, furnish to BPCA, with the execution of this Agreement, to BPCA, a bond in the form annexed hereto as Exhibit [x] in an amount at least equal to one hundred percent (100%) of the Contract Price for performance of the Work (the "Performance Bond"), and a labor and material payment bond in the form annexed hereto as Exhibit [y] in an amount at least equal to one hundred percent (100%) of the Contract Price for the payment of all persons performing labor or providing Materials in connection with the Work (the "Payment Bond"). The surety on said bond shall be a surety company authorized to do business in the State of New York and shall be rated at last B+ by A.M. Best and Company, or meet such other requirements as are acceptable to BPCA.

13.4 Additional or Substitute Bond

If at any time BPCA shall be or shall become dissatisfied with any surety or sureties then obligated upon the Performance Bond or the Payment Bond, or if for any other reason such bonds shall cease to be adequate security to BPCA, Contractor shall within five (5) days after notice from BPCA to do so, substitute an acceptable bond or bonds in such form and sum and signed by such other surety or sureties as may be satisfactory to BPCA, except that the penal sum of said bond shall not exceed the Contract Price as adjusted by Change Orders. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished such an acceptable bond or bonds to BPCA.

ARTICLE 14 - CLAIMS FOR EXTRA WORK

(a) If Contractor is of the opinion that (i) any work which it has been ordered to perform is Extra Work and not Work as set forth in the Contract Documents, (ii) any action or omission of BPCA, Construction Manager or Architect is contrary to the terms and provisions of the Contract Documents and will require the performance of Extra Work or will cause additional expense to Contractor or (iii) any determination, order or directive of BPCA, Construction Manager or Architect is contrary to the terms of the Contract Documents and will require the performance of Extra Work or will cause additional expense to Contractor, Contractor shall:

- (1) not suspend Work but promptly comply with each determination, order or directive and proceed diligently with the performance of the Work in accordance with BPCA's instructions,
- (2) notify BPCA, Construction Manager and Architect in writing within 72 hours of such determination, order, act or omission that Contractor believes such will require it to perform Extra Work or incur additional expense and the basis for Contractor's conclusion and request a final determination thereon by BPCA, and
- (3) present to the Construction Manager for signature daily time and Material tickets to confirm quantities of Material and hours of labor in cases where Contractor is performing the Work which it considers to be Extra Work.

If BPCA determines that (x) work is Work required to be performed hereunder and not Extra Work, (y) action or omission is proper, or (z) a determination, order or directive is proper, Contractor, in order to reserve its right to claim compensation for or damages resulting from the performance of such work or the compliance with such determination, order or directive, must notify BPCA in writing within three (3) working days after receiving notice of BPCA's determination that it is performing such work or complying with such determination, order or directive under protest.

In addition to the foregoing, Contractor must submit to BPCA, Construction Manager and Architect within thirty (30) days after it has performed such work or complied with such determination, order or directive, a detailed statement of the extra expense claimed to have been incurred and of any claimed damages resulting from the performance of such work or the compliance with such determination, order or directive.

(b) No claim for Extra Work shall be allowed unless the same was done pursuant to written order approved in writing by BPCA. Contractor's failure to comply with any provision of this Article:

(1) shall constitute a conclusive and binding determination on the part of Contractor that such action, omission, determination, order or directive does not involve Extra Work, has not caused extra expense or damages to Contractor, and is not contrary to the terms and provisions of the Contract Documents; and

(2) shall constitute an irrevocable waiver by Contractor of any claim for compensation for or damages resulting from the performance of such work or the compliance with such determination, order or directive.

(c) The value of claims for Extra Work, if allowed, shall be determined by the methods described in Section 9.2.

ARTICLE 15 - TERMINATION

15.1 Termination for Cause

(a) If any of the following events shall occur (an "Event of Default") then BPCA or Construction Manager may serve written notice upon Contractor and upon Contractor's surety, if any, terminating this Agreement at a specified date. The notice shall contain the reasons for termination but shall not be effective to terminate this Agreement if Contractor cures all Events of Default stated in the notice prior to the date specified in the notice of termination.

(1) Contractor shall violate any substantial provision of this Agreement, including, without limitation, by failing to maintain the Progress Schedule for the Project or Progress Schedule for the Work then in effect in accordance with, or failing to discharge any of its responsibilities under, Section 3.1(d) hereof, or by failing to indemnify and hold harmless BPCA (as required by Sections 3.1(e), 3.2, 17.5, 21.1, 21.2., 22(c) or any other provision of this Agreement) from and against any and all claims, liabilities, losses, costs or damages arising out of Contractor's performance of, or failure to perform, its obligations under this Agreement in accordance with its terms, or if the Contractor fails to maintain the insurance required by the provisions of Section 13; or

(2) any material adverse change shall take place in the financial condition of the Contractor;

(3) Contractor takes any action which would result in it becoming the subject of any insolvency proceeding. The term "insolvency proceeding" as used herein shall include the filing of a petition for relief under Title 11 of the United States Code by Contractor or the consent, acquiescence or taking 32 #26366880_v1

of any action by Contractor, or the filing by or against Contractor of petition or action, looking to or seeking any reorganization, arrangement, composition, readjustment, liquidation, dissolution, or similar relief under any other regulation; or the appointment, with or without the consent of Contractor, of any trustee, custodian, receiver or liquidator of Contractor or of any property or assets of Contractor; or Contractor's making of an assignment for the benefit of creditors or its inability to pay its debts as they become due.

(4) Contractor misrepresented or omitted information in its submission of the Statement of Qualifications of Contractor submitted by Contractor to BPCA in connection with this Agreement; or

(5) Any partner, principal, director, officer or shareholder owning in excess of five percent (5%) of the stock of Contractor shall have been convicted of a felony.

(b) Upon the occurrence of an Event of Default, at BPCA's option exercised by written notice to Contractor, title to any or all of Contractor's Materials, equipment, work product, work in process and dies and tools, whether on the Site or off site, which are necessary or useful in completing the Work shall vest in BPCA and BPCA may take possession of and utilize the same for completion of the Work; provided that title to such items shall revert to Contractor upon effectuation of a cure of the Event of Default prior to the termination of this Agreement. If no cure has been effected, this Agreement has been terminated and BPCA has taken possession of the same, then after BPCA has taken possession and the Work shall have been completed by or on behalf of BPCA, BPCA shall pay to Contractor, in respect to the items for which title has vested in BPCA, an amount equal to the sum of:

(1) the direct costs of Contractor for such Materials and Work in progress, and

(2) the depreciated book value of such tools and dies less, if BPCA elects to return the tools and dies to Contractor, the salvage value thereof. BPCA shall have the right to set off against such payment due to Contractor any amounts then due and payable by Contractor to BPCA which may accrue as damages owing by Contractor to BPCA under the terms of this Agreement. Contractor shall execute any further documents (including Form UCC-1 Financing Statements to give public notice of the potential ownership interest of Owner as set forth herein) required by BPCA to confirm the terms of this subsection 15.1(b).

(c) Upon termination of this Agreement, BPCA shall have the right, in addition to all other rights and remedies, to complete or have the Work completed by such means and in such manner, by contract or otherwise, with or without public letting as permitted by law, as BPCA deems advisable. BPCA may deduct any loss it incurs thereby from any payment then or thereafter due to Contractor without prejudice to any other remedy BPCA may have.

(d) Immediately upon termination in accordance with the provisions of this Section, each and every Subcontract and Purchase Order entered into by Contractor shall, at BPCA's option, be automatically assigned to BPCA, and Contractor shall insert a provision to this effect in all Subcontracts and Purchase Orders. In the event that it shall be determined that a termination under this paragraph was wrongful or not justified, such termination shall be conclusively deemed to be a termination for convenience of BPCA under Section 15.2 hereof and the sole right, remedy and recourse of Contractor against BPCA shall be governed and determined by Section 15.2 hereof.

(e) Contractor shall, upon the date when such termination shall take effect, promptly notify the union or unions, if any, having jurisdiction over the work by its employees that it releases the Project and consents that the Work be performed by others and Contractor expressly authorizes BPCA to notify the union or unions of such release in the name of Contractor. The failure, neglect or refusal of Contractor to issue such release or the disclaimer by it of the effectiveness of the release issued by BPCA shall subject Contractor to all damages sustained by BPCA.33 #26366880_v1

(f) If this Agreement shall have been terminated by BPCA pursuant to this Section 15.1 and it shall be finally determined by BPCA or a court of competent jurisdiction that adequate grounds for such termination did not exist, then such termination shall be deemed a termination for convenience of BPCA under Section 15.2 hereof and the sole right, remedy and recourse of Contractor against BPCA shall be governed and determined by Section 15.2 hereof.

15.2 Termination for Convenience of BPCA

(a) BPCA, at any time, may terminate this Agreement for its own convenience. Any such termination shall be effected by delivering to Contractor a notice of termination specifying the extent to which performance of Contractor's Work under the Contract is terminated and the date upon which such termination becomes effective. Upon receipt of the notice of termination, Contractor shall:

- (1) stop work under this Agreement on the date specified in the notice of termination;
- (2) place no further Purchase Orders or Subcontracts for Materials, services or facilities;
- (3) unless directed otherwise by BPCA, terminate all Purchase Orders and Subcontracts;
- (4) assign to BPCA, in the manner, at the times, and to the extent directed by Construction Manager, all of the right, title and interest of Contractor under the Purchase Orders and Subcontracts so terminated, in which case BPCA shall have the right, in its sole discretion, to settle or pay any or all claims arising out of the termination of such Purchase Orders and Subcontracts;
- (5) to the extent required by Construction Manager, settle all outstanding liabilities and all claims arising out of such termination of Purchase Orders and Subcontracts, with the approval or ratification of Construction Manager, which approval or ratification shall be final for all the purposes of this Section 15.2;
- (6) transfer title to BPCA and deliver in the manner, at the time, and to the extent, if any, directed by the Construction Manager (i) the fabricated or unfabricated parts, Work in process, completed Work, supplies, and other Material produced as a part of, or acquired in connection with the performance of, the Work terminated by the notice of termination, and (ii) the completed or partially completed plans, drawings, work product, information and other property, which if this Agreement had been completed, would have been required to be furnished to BPCA;
- (7) take such action as may be necessary, or as the Construction Manager may direct, for the protection and preservation of the property related to this Agreement which is in the possession of Contractor and in which BPCA has or may acquire an interest.

(b) In the event of a termination of this Agreement pursuant to this Section 15.2, Contractor shall be paid by BPCA only the apportioned Contract Price for Work installed, the fair and reasonable value of Materials stored on the Site and under order for which Contractor is responsible for payment, less any sums properly deductible by BPCA, except that in no event shall Contractor be entitled to compensation in excess of the total Contract Price.

15.3 Suspension of Work

(a) BPCA may at any time and for any reason direct Contractor to suspend, stop, or interrupt the Work or any part thereof for a period of time. Such direction shall be in writing and 34 #26366880_v1

shall specify the period during which the Work is to be stopped. Upon receipt of a direction of suspension, Contractor shall, as soon as practicable, cease performance of the Work as ordered and take immediate affirmative measures to protect the Work from loss or damage. Contractor shall resume the Work upon the date specified in such direction or upon such other date as BPCA may thereafter specify in writing.

(b) The period during which the Work shall have been suspended, stopped or interrupted may, if warranted, be added to the time fixed for performance. A suspension, stoppage or interruption of the Work pursuant to this provision shall not give rise to any claim against BPCA for additional compensation.

ARTICLE 16 - COMPOSITE DRAWINGS AND COOPERATION

Where Contractor shall perform Work in close proximity to work of other contractors or subcontractors, or where there is evidence that Contractor's Work may interfere with work of other contractors, or subcontractors, Contractor shall assist in arranging space conditions to make satisfactory adjustment for the performance of such work and the Work. Contractor shall prepare composite scale working drawings and Sections as directed by Construction Manager, clearly showing how Contractor's Work is to be performed in relation to work of other contractors or Subcontractors. Such direction may include the following: the scale of the drawings, where the drawings are to be drafted, the number of prints or reproduces, and the requirement of attendance at meetings. The determination as to who shall provide the composite drawings and the contents of the same shall rest exclusively with Construction Manager. Upon request by Construction Manager, Contractor shall sign and be bound by such composite drawings. Such signature shall indicate Contractor's acknowledgment that such drawing is acceptable as related to its Work covered or included in such drawing. If Contractor performs work in a manner which causes interference with the work of other contractors, or Subcontractors, Contractor shall make the changes necessary to correct the condition as directed by Construction Manager.

ARTICLE 17 - PROTECTION OF RIGHTS, PERSONS AND PROPERTY

17.1 Accident Prevention

Contractor shall at all times take every precaution against injuries to persons or damage to property and for the safety of persons engaged in the performance of the Work.

17.2 Safety Programs

Contractor shall be responsible for the initiation, maintenance and supervision of safety precautions and programs as prescribed by Construction Manager in connection with the Work.

17.3 Protection of Work and Property

(a) Contractor shall at all times guard BPCA's property from injury or loss in connection with the Work. Contractor shall at all times guard and protect the Site, the Work and adjacent property. Contractor shall replace or make good any such loss or injury unless such loss or injury is caused directly by BPCA.

(b) Contractor shall have full responsibility to install, protect and maintain all Materials in proper condition and forthwith repair, replace and make good any damage thereto until Final Acceptance of the Work.

(c) No provision is included for stresses or loads imposed by construction operations. If Contractor desires to place such loads in excess of the design load (as shown on the Drawings or Specifications), Contractor shall submit to Architect drawings and calculations prepared by, and bearing the seal of a professional engineer, showing the proposed method for supporting 35 #26366880_v1

such loads, for Architect's review and approval. No loading of any kind in excess of design loads shall be placed on any part of the Project prior to Architect's approval of such submitted drawings and calculations. The costs of the Architect's review shall be reimbursed to BPCA by Contractor.

(d) Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the Work, to make its several parts fit together properly and to make the Work fit together properly with previous and surrounding work. The requirement to cut, fit or patch shall be determined by Construction Manager; provided, that structural elements of the Project shall not be cut, patched, or otherwise altered or repaired without prior authorization by BPCA. Authorization to proceed with remedial operation on any damaged or defective element or portion of the Project shall not constitute a limitation or a waiver of BPCA's, Construction Manager's or Architect's right to require the removal and replacement of any Work which fails to fulfill the requirements of the Contract Documents.

17.4 Adjoining Property

Contractor shall protect all adjoining property and shall repair or replace any such property damaged or destroyed during the progress of the Work.

17.5 Risks Assumed by Contractor

(a) Contractor solely assumes the following risk whether such risk arises from acts or omissions (whether negligent or not and whether supervisory or otherwise) of BPCA, Construction Manager, of Architect or Contractor, of any Subcontractor, of any Materialman, of third persons or from any other cause, including unforeseen obstacles and difficulties which may be encountered in the prosecution of the Work, whether such risk is within or beyond the control of Contractor and whether such risk involves any legal duty, primary or otherwise, imposed upon BPCA:

the risk of loss or damage, direct or indirect, of whatever nature, to the Work or to any Materials furnished, used, installed or received by BPCA, Contractor or any Subcontractor, Materialmen or workmen performing services or furnishing Materials for the Work, whether such Work or Materials are stored at the Site or at an offsite location in accordance with Section 5.4 hereof. Contractor shall bear such risk of loss or damage until Final Acceptance of the Work by BPCA or until completion of such Materials or removal of such Materials from the Site following a determination that they will no longer be needed for the Project and delivery to the location at which they are to be subsequently stored or disposed of, whichever event occurs last. A portion of the risk of such loss or damage may be insured against under the terms of a "builder's risk" insurance policy maintained in the name of Contractor, among others, as described in Section 13.1(i). Notwithstanding the status of any actual or potential recovery or claim under the said "builder's risk" insurance policy, in the event of any loss or damage, Contractor immediately shall repair, replace or make good any such loss or damage.

(b) Contractor shall not, without obtaining express advance permission of BPCA, raise any defense involving in any way jurisdiction of any court in which BPCA brings an action arising under this Agreement, governmental nature of BPCA or the provisions of any statutes respecting suits against BPCA.

(c) Contractor's obligations under this Article 17 shall not be deemed waived, limited or discharged by the enumeration or procurement of any insurance for liability for damages.

(d) Neither Final Acceptance of the Work nor any payment made hereunder shall release Contractor from Contractor's obligations under this Article 17. The enumeration elsewhere in this Agreement of particular risks assumed by Contractor or of particular claims for which Contractor is responsible shall not be deemed to limit the effect of the provisions of this Article 17 or to imply that Contractor assumes or is responsible for only risks or claims of the 36 #26366880_v1

type enumerated; and neither the enumeration in this Article 17 nor the enumeration elsewhere in this Agreement of particular risks assumed by Contractor of particular claims for which Contractor is responsible shall be deemed to limit the risks which Contractor would assume or the claims for which Contractor would be responsible in the absence of such enumerations.

(e) The Contractor is advised that the Work under this Agreement may impose certain obligations and requirements mandated by the U.S. Department of Labor Occupational Safety and Health Administration regulations, Title 29 CFR Part 1926.62 Lead Exposure in Construction, relative to the potential exposure to lead by its employees. The Contractor assumes entire responsibility and liability for complying fully in all respects with these regulations.

(f) Contractor agrees that any unsatisfied claims of the BPCA arising from Contractor's obligations under this Article 17 or Article 13 (Insurance) may be offset or deducted by BPCA from any payments due to Contractor hereunder.

ARTICLE 18 - USE PRIOR TO ACCEPTANCE BY BPCA

(a) If before Final Acceptance of Work, BPCA desires to use the Site or any part thereof which is completed or partly completed, or to place or install therein or thereon equipment, BPCA shall have the right to do so, and Contractor shall in no way interfere with or object to such use by BPCA.

(b) Such use (1) shall not constitute acceptance of space, systems, Materials or elements of the Work, nor shall such use affect the start of any guaranty period and (2) shall not affect the obligations of Contractor for work which is not in accordance with the requirements of this Agreement or other obligations of Contractor under the Contract Documents.

(c) Contractor shall continue the performance of the Work in a manner which shall not unreasonably interfere with such use by BPCA.

ARTICLE 19 - EXEMPTION FROM SALES AND COMPENSATING USE TAXES

19.1 BPCA Exempt

BPCA is exempt from payment of sales and compensating use taxes of the State of New York and of cities and counties thereof on all Materials which will become an integral component of the completed Project pursuant to this Agreement.

19.2 Certificates

Contractor, Subcontractors and Materialmen shall obtain any and all necessary certificates or other documentation from the appropriate governmental agency or agencies, and use such certificates or other documentation as required by law, rule or regulations to obtain said tax exemption.

ARTICLE 20 - WARRANTIES AND GUARANTIES

20.1 In General

(a) Contractor guarantees that all Work performed and all Materials furnished will conform to the Contract Documents as to kind, quality, functions, design and characteristics of material and workmanship. Contractor shall remove, replace and repair, at its sole cost and expense, all defects in workmanship, Materials, ratings, capacities, or design characteristics occurring in or to the Work including, without limitation, any portion of the Work furnished or performed by any Subcontractor or Materialman, within one year from the date of Final 37 #26366880_v1

Acceptance. Contractor guarantees that all Work performed and all Materials furnished will conform to the Contract Documents as to kind, quality, functions, design and characteristics of material and workmanship. Contractor hereby acknowledges that BPCA may be required to incur substantial expense if correction of the Work is required particularly if such correction involves the uncovering, removal or replacement of concrete, wiring and piping installed at the Site. If Contractor shall fail to reimburse BPCA for any such expense which may become payable as provided in this paragraph, BPCA shall be entitled to deduct such expense from any payments required to be made by BPCA to Contractor pursuant to this Agreement. Contractor, upon demand, shall pay for all damage to all other Work resulting from such defects and all expenses necessary to remove, replace and repair such other Work which may be damaged in removing, replacing or repairing such defects. (b) The benefits of this Article 20 shall inure to the benefit of BPCA and its respective successors and assigns. In addition, any bond or guaranty which may be required of Contractor or any Subcontractor or Materialman under the Contract Documents shall inure to the benefit of BPCA and its respective successors and assigns. (c) The rights and remedies afforded BPCA under this Section are in addition to and not in lieu of and do not in any way affect, change, alter, modify, vary or prejudice any right, remedy or recourse which BPCA may have under other provisions of this Agreement or pursuant to law.

20.2 Additional Guaranties

In addition to the general guaranty set forth in Section 20.1, any other guaranties set forth in the Contract Documents shall be applicable.

20.3 Repair by Another

If BPCA has requested Contractor to correct any Work and Contractor shall not have completed any correction of the Work as shall be required pursuant to this Article 20 within ten (10) working days after receipt of written notice from BPCA specifying the defect or damage required to be removed, replaced or repaired, or if such defect or damage is of such a nature that it cannot be completely removed, repaired and replaced within such ten (10) day period and Contractor shall not have diligently commenced removing, repairing and replacing such defect and damage within such ten (10) day period or shall not thereafter with reasonable diligence and in good faith proceed to do such work, BPCA may employ such other person, firm or corporation as it may choose, to perform such removal, replacement and repair, and Contractor shall, upon demand, pay to BPCA all amounts which BPCA expends for such removal, replacement and repair.

ARTICLE 21 - INDEMNITY

21.1 Delay or Failure

Contractor and its sureties shall be responsible for and pay to BPCA, all loss, damage and additional cost incurred by reasons or on account of (i) the unexcused delays of Contractor (determined as set forth in Section 3.1 hereof) or (ii) Contractor's failure to fully and completely carry out the terms of this Agreement.

21.2 Inventions

In addition to the indemnity set forth in Section 17.5(a), Contractor shall indemnify and hold BPCA harmless from all claims, demands or liabilities of any kind or nature, including costs and expenses, for or on account of any patented or unpatented plan, design, invention, article, arrangement, appliance, Material, or preparation, manufactured, used or followed in the performance of or incident to the Work hereunder, and shall defend any and all actions arising out of the same. In the event of any injunction or legal action by reason thereof, which shall operate to stop or retard the Work, BPCA shall have the right to substitute such other articles of like kind as will enable it to complete the Project, and all costs and expenses occasioned thereby shall be borne by Contractor.38 #26366880_v1

21.3 Liability

Contractor shall hold BPCA, the Conservancy, the State of New York, Construction Manager and Architect and their servants, agents and employees harmless from and shall indemnify them against any and all liability, loss, cost, damage or expense, including attorneys' fees, by reason of claims of Contractors employees or employees of its Subcontractors or Materialmen for injuries or death or by reason of claims of any other person or persons, including BPCA, the Conservancy, the State of New York, Construction Manager, and Architect and their servants, agents or employees, for injuries to person or property or for death occasioned in whole or in part by any act or omission of Contractor, its Subcontractors and Materialmen and their servants, agents and employees whether or not it is contended that BPCA contributed thereto or was responsible therefor by reason of nondelegable duty. If, however, this indemnification is limited by applicable law, then the said indemnification hereby shall be similarly limited to conform with such law, it being the intention that this indemnification shall be as permitted by applicable law. BPCA may retain any monies due or to become due hereunder sufficient to indemnify BPCA, the Conservancy, the State of New York, Construction Manager, and Architect and their servants, agents and employees against such injuries, claims, suits, actions, costs or damages should any such claim arise. Contractor shall, at the sole option of BPCA and upon written demand of BPCA, assume the defense in behalf of BPCA, the Conservancy, the State of New York, Construction Manager, and Architect or their servants, agents or employees of any action or proceeding commenced against them whether or not Contractor is named as a party therein as part of Contractor's aforementioned obligation to indemnify and hold them harmless.

ARTICLE 22 - PATENTS AND ROYALTIES

(a) In the prosecution of the Work, Contractor will not use or furnish any patented appliance, article, device or method of construction unless it has authorization for such use. Contractor shall pay all royalty and license fees.

(b) Any approval of Materials by Architect shall be construed merely as an approval of their adequacy for the Work.

(c) Contractor will be responsible for all claims against BPCA for the infringement of any patents. Contractor shall defend all suits and claims for infringement of any patent rights and shall indemnify and hold BPCA harmless from loss on account thereof. Any expenses incurred by Contractor in connection with suits and claims will not offset the Contract Price.

(d) Contractor hereby and presently grants to BPCA an irrevocable and non-exclusive license to utilize all of the Contractor's rights in and to:

- (1) all United States patents and patents registered in any other foreign country;
- (2) all proprietary knowledge, data and trade secrets; and
- (3) all Engineering data and information necessary in connection with and solely in connection with, all work performed by BPCA or other contractors hired by BPCA to complete the work after termination of this Agreement pursuant to Section 15.1.

Each Purchase Order and Subcontract shall contain a similar clause with respect to the rights of Subcontractor and Materialman in and to the foregoing, in form and substance acceptable to BPCA, granting BPCA the aforesaid license. BPCA shall not be obligated to pay any royalties, license fees or any other consideration to Contractor or any Subcontractor or Materialman for this license. Contractor and each Subcontractor and Materialman shall execute a separate license agreement, in form and substance satisfactory to BPCA, concurrently with the execution of this Agreement, or any Subcontract or Purchase Order, or within ten (10) days thereafter, embodying the terms of this Section. On request, Contractor and each Subcontractor and Materialman shall furnish BPCA with copies of all related Engineering and technical data required to complete the work.39 #26366880_v1

ARTICLE 23 - AS-BUILT DRAWINGS

- (a) Contractor shall be furnished by BPCA, at BPCA's expense, with one physical set and two electronic copies (on disk) of 48" x 36" Drawings, on which Contractor, where applicable, shall record the installation of underground utilities, concealed piping, concealed valves and control equipment and record changes in the Work. Such recording shall be kept current and include final and actual sizes as well as the location and elevation of the above figures and offset distances in feet and inches to permanent surface improvements such as buildings, retaining walls or curbs. During the progress of the Work, at the request of Construction Manager and prior to the approval of any Requisition of Contractor, Contractor shall provide a 48" x 36" PDF to BPCA of the up to-date Drawings showing the Work as installed. At completion of the Work, Contractor shall complete, sign and date the 48" x 36" physical set of Drawings and deliver it to Architect.
- (b) After review by Architect and return to Contractor for any required changes, Contractor shall furnish to BPCA, at Contractor's expense, at least one physical set and two electronic copies (on disk) of 48" x 36" final Drawings.

ARTICLE 24 - SHOP DRAWINGS AND SAMPLES

24.1 Contractor Submittal

Contractor shall submit to Construction Manager the shop drawings, Product Data and Samples required by the Contract Documents and shall adhere to all submittal and scheduling requirements with respect thereto. After review of such shop drawings, Product Data and Samples by Construction Manager and their approval by Architect, each of such items shall be returned in accordance with the procedures established therefor.

24.2 Contractor's Responsibility

Architect's approval of shop drawings, Product Data and Samples shall not relieve Contractor of responsibility for and deviation from the requirements of the Contract Documents. Contractor shall be responsible for the accuracy of the shop drawings, Product Data and Samples and for the conformity of Documents unless Contractor has notified Architect of the deviation in writing at the time of submission and has received from Architect written approval by separate letter of the specified deviations. Architect's approval shall not relieve Contractor of responsibility for errors or omissions in the shop drawings, Product Data or Samples.

ARTICLE 25 – NOTICES

Whenever it is provided herein that notice, demand, request, consent, approval or other communication shall or may be given to, or served upon, either of the parties by the other, or whenever either of the parties desires to give or serve upon the other any notice, demand, request, consent, approval or other communication with respect hereto, each such notice, demand, request, consent, approval or other communication shall be in writing and shall be effective for any purpose only if given or served by hand with proof of delivery, by delivery by an overnight courier service which obtains receipts, or by mailing the same by express or certified mail, postage prepaid, return receipt requested, addressed to:

(a) If to BPCA:

[Name & Title of BPCA Person], Battery Park City Authority, One World Financial Center, 24th floor, New York, NY 10281

with a copy to: General Counsel, at the same address

or to such other address as BPCA may from time to time designate in the manner set forth above.40

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(b) If to Contractor:

[Name, Company and Address]

or to such other addresses as Contractor may from time to time designate in the manner set forth above.

(c) if to Construction Manager

[Name, Company and Address]

or to such other addresses as the Construction Manager may from time to time designate in the manner set forth above.

(d) if to Architect/Engineer/etc.

[Name, Company and Address]

or to such other addresses as Architect or Engineer may from time to time designate in the manner set forth above.

(e) Every notice, demand, request, consent, approval or other communication hereunder shall be deemed to have been given or served (i) in the case of express or certified mail, on the date the receipt is dated by the Post Office or express mail carrier, as the case may be, and (ii) in the case of notice by hand or by overnight courier service, upon delivery, as evidenced by a signed receipt.

ARTICLE 26 - EMPLOYMENT AND DIVERSITY

26.1 Definitions

The following terms shall have the meanings set forth below for the purposes of this Article 26:

(a) "Certified Business." A business verified as a minority or women-owned business enterprise by the Division or such other New York State agency authorized to make such certification.

(b) "Diversity Program." The program by which Owner shall monitor Contractor's compliance with the requirements set forth in (i) the MBE/WBE Required Participation Plan and (ii) the Utilization Plan.

(c) "Division." The Division of Minority and Women's Business Development of the New York State Department of Economic Development.

(d) "Director." The Director or the Executive Director of the Division.

(e) "Directory." The directory of certified businesses prepared by the Director for use by Owner and contractor in complying with the provisions of the Executive Law of the State of New York, Article 15-A.

(f) "MBE/WBE Required Participation Plan." The plan previously submitted by Contractor to Owner listing the certified MBEs and/or WBEs which the Contractor intends to use in the performance of this agreement in order to ensure that MBEs and WBEs are awarded a fair share of the total dollar value that is to be paid for the Work.

(g) "Minority" or "Minority Group Member." A United States citizen or permanent resident alien who is and can demonstrate membership in one of the following groups:41 #26366880_v1

- (1) Black persons having origins in any of the Black African racial groups;
- (2) Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American descent of either Indian or Hispanic origin, regardless of race;
- (3) Native American or Alaskan native persons having origins in any of the original peoples of North America; or
- (4) Asian and Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian subcontinent or the Pacific Islands.
- (h) "Minority-owned Business Enterprise" ("MBE"). A business enterprise, including a sole proprietorship, partnership or corporation that is:
 - (1) at least 51 percent owned by one or more Minority Group Members;
 - (2) an enterprise in which such Minority ownership is real, substantial and continuing;
 - (3) an enterprise in which such Minority ownership has and exercises the authority to control and operate, independently, the day-to-day business decisions of the enterprise; and
 - (4) an enterprise authorized to do business in the State of New of New York and is independently owned and operated.
- (i) "Subcontract." An agreement providing for a total expenditure in excess of \$25,000 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon between a contractor or consultant and any individual or business enterprise, including a sole proprietorship, partnership, corporation, or not-for-profit corporation, in which a portion of a contractor's obligation is undertaken or assumed, but shall not include any construction, demolition, replacement, major repair, renovation, planning or design or real property or improvements thereon for the beneficial use of the contractor.
- (j) "Utilization Plan." A plan previously submitted by Contractor to Owner which sets forth the proposed percentages of employees who are either Minority Group Members or women and who will be used by Contractor to perform the Work.
- (k) "Women-owned Business Enterprise" ("WBE"). A business enterprise, including a sole proprietorship, partnership or corporation that is:
 - (1) at least 51 percent owned by one or more United States citizens or permanent resident aliens who are women;
 - (2) an enterprise in which the ownership interest of such women is real, substantial and continuing;
 - (3) an enterprise in which such women ownership has and exercises the authority to control and operate, independently, the day-to-day business decisions of the enterprise; and
 - (4) an enterprise authorized to do business in the State of New York and which is independently owned and operated.

26.2 Equal Employment Opportunities for Minority Group Members and Women

- (a) During the performance of the Work, Contractor agrees as follows:
 - (1) Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, 42 #26366880_v1

disability or marital status; shall undertake or continue existing programs to ensure that Minority Group Members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status; and shall make and document its good faith effort to achieve prompt and full utilization of Minority Group Members and women at all levels and in all segments of its work force where deficiencies exist.

(2) At the request of Owner, Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of Contractor's obligations herein.

(3) Contractor shall state in all solicitations or advertisements for employees that in the performance of the Work, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

(4) Contractor and any Subcontractor shall be required to submit compliance reports in accordance with this Section 26 relating to their operations and the implementation of the Diversity Program in effect as of the date of execution of this Agreement.

(5) Contractor shall submit an EEO policy statement to Owner within seventy-two hours of notice from Owner of the awarding of this contract to Contractor. If Contractor does not have an existing EEO policy statement, Owner may provide to Contractor a model statement.

(b) Contractor shall include the provisions of Section 26.2(a) in every Subcontract in such a manner that the provisions will be binding upon each Subcontractor as to the Work in connection with this contract's execution.

(c) Contractor shall comply with the provisions of the Human Rights Law, all other State and Federal statutory and constitutional non-discrimination provisions. Contractor and subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest

(d) Miscellaneous

(1) The provisions of this Section shall not be binding upon Contractor or its Subcontractors in the performance of Work or the providing of services, or any other activities that are unrelated, separate or distinct from this Agreement as expressed by its terms.

(2) The requirements of this Section shall not apply to any employment outside New York State, or application for employment outside such state, or solicitations, or advertisements therefore, or any existing programs of diversity regarding employment outside New York State and the effect of contract provisions required by this section shall be so limited.

(e) Enforcement

The parties agree to be bound by provisions of Article 15-A of the Executive Law of the State of New York and by the regulations adopted thereunder.43 #26366880_v1

26.3 Workforce Participation

- (a) Contractor is required to make and document good faith efforts to achieve the participation of _____ % Minority Group Members and _____ % women in the workforce for each trade or services utilized by Contractor in the Work as set forth in the Utilization Plan.
- (b) To ensure compliance with this Section, Contractor shall submit a staffing plan to document the composition of the proposed workforce to be utilized in the performance of this contract by the specified categories listed, including ethnic background, gender, and Federal occupational categories. Contractors shall complete the staffing plan form and submit it as part of their bid or proposal or within a reasonable time, but no later than the time of award of the contract.
- (c) The participation for Minority Group Members and women employees must be substantially uniform throughout the work.
- (d) Contractor shall not participate in the transfer of Minority Group Member employees or women employees from employer to employer or from project to project for the sole purpose of satisfying the participation goals above set forth.
- (e) In achieving such participation, Contractor is required to make good faith efforts to find and employ qualified Minority Group Members and women supervisory personnel and journeymen.
- (f) Contractor shall meet with Owner, and such other persons as Owner may invite, on a periodic basis as required by Owner to discuss issues relating to Minority Group Members and women workforce participation. At such meetings, Contractor shall report on the names of its Subcontractors then engaged in construction on the project to which the Work relates or which within 60 days are scheduled to be engaged in construction of such project, on the nature of the work and anticipated construction schedule of Contractor and Subcontractors, on the anticipated hiring needs of Contractors and Subcontractors, on the names of the responsible foremen directly employed by Contractor, and such information requested by Owner that will then promote the employment of Minority Group Members and women. Contractor shall use its best efforts to obtain the above information and shall, upon Owner's request, cause its Subcontractors to attend said meetings and provide the above information.
- (g) Compliance reports with respect to the Utilization Plan ("Utilization Compliance Reports") which shall be submitted to Owner's Diversity officer on a monthly basis and shall be in accordance with the following:
- (1) Owner may require that Contractor submit Utilization Compliance Reports for the duration of this contract to Owner regarding Contractor's operation and implementation of the Utilization Plan portion of the Diversity Program in effect as of the date of execution of this Agreement.
 - (2) The Utilization Compliance Reports shall include information on any Subcontractor involved in the performance of the contract with regard to the Subcontractor's compliance with the Diversity Program.
 - (3) The Utilization Compliance Reports shall include, but are not limited to the following:
 - (i) a breakdown of the Subcontractors by ethnic background, gender or such other categories as may be required by Owner;
 - (ii) the actions the Contractor and Subcontractors have taken to meet the components of the Diversity Program;
 - (iii) how Contractor and Subcontractors intend to utilize participation of Minority Group Members and women in their workforce in connection with the performance of the Work and timetables therefor
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during the remainder of their performance of the Work.

(h) Any failure by Consultant to submit a required Utilization Compliance Report, including information on any of its Subcontractor's compliance, may be deemed a breach of contract with respect to this agreement.

(i) Contractor shall include the provisions in Section 26.3 in every Subcontract, and such provisions shall be binding upon each Subcontractor.

26.4 Minority Business Enterprise (MBE) Participation and Women's Business Enterprise Participation

(a) Contractor shall make good faith efforts to attain the participation of _____ % MBE and _____ % WBE in the total dollar value of the Work.

(b) The total dollar value of the Work for purposes of determining compliance with the MBE/WBE Required Participation Plan shall be calculated as follows:

(1) if an MBE and WBE is not the Contractor -- the dollar value of the Work subcontracted to MBEs and WBEs; provided, however, that where materials are purchased from an MBE and WBE which acts merely as a conduit for goods manufactured or produced by a non-MBE and non-WBE, only that portion of the price paid for such materials which will accrue as profit to the MBE or WBE and/or the Fee received by the MBE and WBE shall be included;

(2) if Contractor is a joint venture including one or more MBEs and WBEs as joint venturers -- the Fee multiplied by the percentage of the joint venture's profits (or losses) which are to accrue to the MBE and WBE joint venturer(s) under the joint venture agreement; and

(3) if an MBE and WBE is Contractor or where Contractor is a joint venture consisting entirely of MBEs and WBEs -- the Fee.

(c) Compliance reports with respect to the MBE/WBE Required Participation Plan ("MBE/WBE Compliance Reports") shall be required as follows:

(1) MBE/WBE Compliance Reports shall be submitted to Owner on a monthly basis and shall include information with respect to:

(i) dividing the Work to be subcontracted into smaller portions, where economically and technically feasible;

(ii) actively and affirmatively making a good faith effort to solicit bids for subcontracts from qualified MBEs and WBEs identified in the directory of certified businesses available at the office of the Owner's Diversity Officer, including the circulation of solicitations to Minority contractor associations. Contractor shall maintain records detailing the efforts made to provide for meaningful MBE and WBE participation in the Work, including the names and addresses of all MBEs and WBEs contacted and, if any such MBE or WBE is not selected as a joint venture or subcontractor, the reasons for such decision;

(iii) making plans and specifications for prospective work available to MBEs and WBEs in sufficient time for review;

(iv) utilizing the services and cooperating with those organizations providing technical assistance to Owner in connection with the participation of MBEs and WBEs in the project to which the Work relates;

(v) encouraging the formation of joint ventures, partnerships or 45 #26366880_v1

other similar arrangements among subcontractors where appropriate;

(vi) ensuring that provision is made to provide progress payments to MBEs and WBEs on a timely basis; and
(vii) not requiring bonds from and/or providing bonds and insurance for MBEs and WBEs where appropriate, and/or assisting in obtaining bonds and insurance for MBEs and WBEs where feasible.

(2) MBE/WBE Compliance Reports which shall be submitted to the Diversity Department on a monthly basis.

(3) MBE/WBE Compliance Reports shall also include, but not be limited to, the following information:

(i) the name, address and telephone number of each certified MBE and WBE which Contractor is using or intends to use to comply with the MBE/WBE Required Participation Plan.

(ii) a brief description of the contract scope of work to be performed for the Contractor by each certified MBE and WBE and the scheduled dates for performance;

(iii) a statement of whether the Contractor has a written agreement with each certified MBE and WBE which Contractor is using or intends to use, and if requested, copies of such agreements;

(iv) the actual total cost of the contract scope of work to be performed by each certified MBE and WBE for this Agreement; and

(v) The actual amounts of any payments made by Contractor to each certified MBE and WBE as of the date the MBE/WBE Compliance Report was submitted.

(d) Contractor shall provide Owner with Monthly MBE/WBE and Workforce Utilization Reports, by the last calendar day of each month, **in the form of Exhibit [x]** hereto. Failure to provide such reports shall be an event of default of Contractor's obligations pursuant to Article 15.1 (a) (1) hereof.

(e) Contractor shall provide proof of payment to all subcontractors and materialmen in the form of a waiver of lien or cancelled check, with each request for payment. Failure to provide such proof of payment shall be an event of default of Contractor's obligations pursuant to Article 15.1 (a) (1) hereof.

26.5 Failure to Comply

(a) In accordance with 5 NYCRR §142.13, Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the M/WBE participation goals set forth herein or any other requirements set forth in this Article 26, such finding constitutes a breach of contract and Owner may withhold payment from the Contractor as liquidated damages.

(b) Such liquidated damages shall be calculated based on the actual cost incurred by Owner related to Owner's expenses for personnel, supplies and overhead related to establishing, monitoring, and reviewing certified MBE/WBE programmatic goals and Diversity and Equal Opportunity compliance.

ARTICLE 27 - STANDARD PROVISIONS

27.1 Provision Required by Law Deemed Inserted

Each and every provision of law and governmental regulation required by law to 46 #26366880_v1

be inserted in the Contract Documents shall be deemed to be inserted therein and this Agreement shall read and shall be enforced as though so included therein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, this Agreement shall be deemed to be amended to make such insertion or correction. If this Agreement contains any unlawful provision, the same shall be deemed of no effect and shall, upon the application of either party, be deemed stricken from this Agreement without affecting the binding force of the remainder.

27.2 Compliance with Laws, Rules and Regulations

Contractor and each Subcontractor and Materialman shall comply fully with all applicable laws, rules and regulations pertaining to the Project and the Work.

27.3 Applicable Law, Forum and Jurisdiction

This Agreement shall be governed by the laws of the State of New York. All actions or proceedings relating, directly or indirectly, to this Agreement shall be litigated only in courts located within the County of New York. Contractor, any guarantor of the performance of its obligations hereunder (including sureties for Payment and Performance Bonds) ("Guarantor") and their successors and assigns hereby subject themselves to the jurisdiction of any state or federal court located within such county, waive the personal service of any process upon them in any action or proceeding therein and consent that such process be served by certified or registered mail, return receipt requested, directed to the Contractor and any successor at Contractor's address hereinabove set forth, to Guarantor and any successor at the address set forth in the instrument of guaranty and to any assignee at the address set forth in the instrument of assignment. Such service shall be deemed made as of the date of the return receipt.

27.4 No Third Party Rights

Nothing in this Agreement shall create or shall give to third parties any claim or right of action against BPCA, Construction Manager, or Architect beyond such as may legally exist irrespective of this Agreement.

27.5 Exculpation; Limitation of Liability

In no event shall any claim be asserted under this Agreement by Contractor or any Subcontractor or Materialman against any member, officer, employee, lessee, consultant or agent of BPCA, Construction Manager, or Architect. By execution of this Agreement, Contractor agrees to look solely to BPCA with respect to any claim which may arise. It is hereby understood by and between the parties hereto that BPCA shall only be liable to the extent of monies available to BPCA.

27.6 Protection of Lives and Health

(a) Contractor's, Subcontractor's and Materialman's attention is specifically called to the rules and regulations, codes and bulletins of the New York State Department of Labor. Attention is also directed to the standards imposed under the Federal Occupational Safety and Health Act of 1970, as amended.

(b) Contractor shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under this Agreement, and shall immediately notify BPCA in writing of any injury which results in hospitalization or death.

(c) Contractor alone shall be responsible for the safety, efficiency and adequacy of contractor's work, plant, appliances and methods, and for any damage which may result from the failure, or the improper construction, maintenance, or operation of such work, plant, appliances and methods.47 #26366880_v1

27.7 Waiver of Immunity Clause

Contractor hereby agrees to the provisions of New York Public Authorities Law Section 2875 which require that upon the refusal of a person, when called before a grand jury, head of a State department, temporary State commission, or other State agency, the Organized Crime Task Force in the State Department of Law, head of a department or other City agency, which is empowered to compel the attendance of witnesses and examine them under oath, to testify in an investigation concerning any transaction or contract had with the State, any political subdivision thereof, or with any public department, agency or official of the State, a public authority or with any public department, agency or official of the State or of any political subdivision thereof or of a public authority, that person must sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant questions concerning such transaction or contract:

(a) such person, and any firm, partnership or corporation of which such person is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any public authority or official thereof, for goods, work or services, for a period of five (5) years after such refusal; and

(b) any and all contracts made with any public authority or official thereof, by such person, and by any firm, partnership or corporation of which such person is a member, partner, director or officer may be canceled or terminated by the public authority without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the public authority for goods delivered or work done prior to the cancellation or termination shall be paid.

27.8 Prohibited Interests

No official of BPCA who is authorized in such capacity and on behalf of BPCA to negotiate, make, accept, or approve, or take part in negotiating, making, accepting, or approving any Architectural, Engineering, inspection, Purchase Order or any Subcontract in connection with the work, shall become directly or indirectly interested personally in the Agreement. Contractor is advised that no official or employee of BPCA is permitted to indirectly solicit, accept, or receive gifts whether in the form of money, service, loan, travel, entertainment, hospitality, thing or promise, or in any other form. No officer, employee, architect, attorney, engineer, inspector or consultant of or for BPCA who is authorized in such capacity and on behalf of BPCA to exercise any legislative, executive, supervisory or other similar functions in connection with the Work, shall become directly or indirectly interested personally in the Agreement, any Purchase Order, Subcontract, insurance contract, or any other contract pertaining to the Work.

27.9 Labor Provisions

(a) It is hereby agreed that all applicable provision of the Labor Law of the State of New York shall be carried out in the performance of the Work.

(b) Contractor specifically agrees, as required by New York Labor Law Sections 220 and 220-d as amended, that:

(1) no laborer, workman or mechanic, in the employ of Contractor, Subcontractor, Materialman or other person doing or contracting to do the whole or any part of the Work contemplated by the Contract Documents shall be permitted or required to work more than eight (8) hours in any one calendar day or more than five (5) days in any one week, except in the emergencies set forth in the Labor Law.

(2) the wages paid for a legal day's work shall be not less than the prevailing rate of wages as defined by law;

(3) the minimum hourly rate of wage to be paid shall be not less than that stated in the Contract Documents and as shall be designated by the Industrial Commissioner of the State of New York; and

(4) Contractor shall post at appropriate conspicuous points at the Site, a schedule showing all determined minimum wage rates for the various classes of laborers and mechanics to be engaged in the Work and all deductions, if any, required by law to be made from unpaid wages actually earned by the laborers and mechanics so engaged.

(c) The minimum wage rates, if any, herein specified for apprentices shall apply only to persons working with the tools of the trade which such persons are learning under the direct supervision of journeymen mechanics. Except as otherwise required by law, the number of apprentices in each trade or occupation employed by Contractor or any Subcontractor or Materialman shall not exceed the number permitted by the applicable standards of the New York State Department of Labor, or, in the absence of such standards, the number permitted under the usual practice prevailing between the unions and the employers' association of the respective trades or occupations.

(d) All employees of Contractor and each Subcontractor and Materialman shall be paid in accordance with the provisions of the Labor Law.

(e) Contractor agrees that, in case of underpayment of wages to any worker engaged in the Work by Contractor or any Subcontractor or Materialman, BPCA shall withhold from Contractor out of payments due an amount sufficient to pay such worker the difference between the wages actually paid such worker for the total number of hours worked, and that BPCA may disburse such amount so withheld by BPCA for and on account of Contractor to the employee to whom such amount is due. Contractor further agrees that the amount to be withheld pursuant to this paragraph may be in addition to the percentages to be retained by BPCA pursuant to other provisions of the Contract Documents.

(f) The Labor Law provides that this Agreement may be terminated for cause and no sum paid for any Work done thereunder upon a second conviction for willfully paying less than:

(1) the stipulated wage scale as set forth in New York Labor Law Section 220, subdivision 3, as amended, or
(2) less than the stipulated minimum hourly wage scale as specified in Labor Law, Section 220-d, as amended.

(g) Contractor specifically agrees, as required by the New York Labor Law Section 220-e, as amended, that:

(1) in the hiring of employees for the performance of Work under this Agreement or any Subcontract or Purchase Order hereunder, or for the manufacture, sale or distribution of Materials, equipment or supplies hereunder, but limited to operations performed within the territorial limits of the State of New York, no Contractor, Subcontractor, Materialman or any person acting on behalf of such Contractor or Subcontractor, or Materialman, shall by reason of race, creed, color, sex 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;

(2) no Contractor, Subcontractor, Materialman, or any person on behalf of such Contractor, Subcontractor or Materialman shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this Agreement on account of race, creed, color, sex or national origin;

(3) there may be deducted from the amount payable to Contractor, by BPCA under this Agreement, a penalty of \$50.00 for each person for each calendar day during which such person was discriminated against or intimidated in violation of the terms of this Agreement; and

(4) this Agreement may be canceled or terminated for cause by BPCA and all 49 #26366880_v1

monies due or to become due hereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this Section of this Agreement.

(h) Where applicable, Contractor agrees to settle labor disputes in accordance with the provisions of The New York Plan For The Settlement of Jurisdictional Disputes Between The Building And Construction Trades Council Of Greater New York And The Building Trades Employers' Association Of The City of New York.

27.10 Disputes Resolution Procedure

(a) The provisions of this Article shall constitute Contractor's sole means for challenging any determination, order or other act or omission of BPCA or otherwise asserting against BPCA any claim of whatever nature arising under, or in any way relating to, this Agreement (any such challenge or assertion by Contractor being herein referred to as a "Dispute(s)"). Exhaustion of these dispute resolution procedures, including the judicial review set forth below, shall be the parties' sole remedy in connection with any Dispute.

(b) The parties to this Agreement hereby authorize and agree to the resolution of all Disputes arising out of, under or in connection with, this Agreement in accordance with the following and pursuant to the procedures set forth in paragraph (c) of this Section 27.10. With respect to any Dispute which relates in whole or primary part to technical issue(s) under this Agreement including, without limitation, determinations as to the acceptability or fitness of any Work, the meaning or interpretation of the Contract Documents, the question of whether any Work falls within the scope of the Specifications set forth in the Contract Documents, the acceptability of any proposed substitutions, modifications or other submissions under this Agreement, the disapproval of proposed Subcontractors or Materialmen (to the extent such disapproval is related to technical issues), the extension of time to the extent related to a technical matter, the question of whether substantial completion or final completion has been achieved, the parties hereby authorize the General Counsel of BPCA, or his/her designee, (hereinafter referred to as the "Arbiter"), acting personally, to render a final and binding decision.

(c) All Disputes shall be initiated through a written submission by either party (such submission to be hereinafter referred to as the "Dispute Notice") to the Arbiter within ten (10) days of the determination, order or other act or omission which is the subject of the Dispute. Within ten (10) days after the submission of such Dispute Notice, the party initiating the Dispute shall provide the Arbiter with all evidence and other pertinent information in support of the party's position and/or claim. Within thirty (30) days from the date of the Dispute Notice, the party against whom the Dispute Notice was filed shall submit any and all materials which it deems pertinent to the Arbiter. Upon submission of a Dispute Notice to the Arbiter, the Arbiter shall render its decision in writing and deliver a copy of same to the parties within a reasonable time not to exceed sixty (60) days after the receipt of all materials. In rendering such decision, the Arbiter may seek such technical or other expertise as it shall deem necessary or appropriate (notifying both parties to the Dispute when he/she so seeks such other information or expertise) and seek any such additional oral and/or written argument or materials from either or both parties to the Dispute as he/she deems fit. The Arbiter shall have the discretion to extend the time for submittals required hereunder. The Arbiter's ability to render and the effect of a decision hereunder shall not be impaired or waived by any negotiations or settlement offers in connection with the matter presented, whether or not the Arbiter participated therein, or by any prior decision of others, or by any termination or cancellation of this Agreement. The decision of the Arbiter shall be final and binding on both parties to this Agreement.

(d) It is expressly understood and agreed that the pendency of a Dispute hereunder shall at no time and in no respect constitute a basis for any modification, limitation or suspension of Contractor's obligation to fully perform in accordance with this Agreement and that Contractor shall remain fully obligated to perform the Work notwithstanding the existence of any such Dispute.50 #26366880_v1

27.11 Additional Provisions Relating to the Prosecution of Claims for Money Damages

(a) Except as otherwise provided in this Agreement, if Contractor claims or intends to claim compensation or money damages for any damage or loss sustained by reason of any determination, order or other act or omission of BPCA, Contractor shall furnish a written notice to the Arbiter setting forth the nature of the claim and the extent of the damage sustained within ten (10) days of the occurrence of such loss or damages. This written notice shall constitute Contractor's submission to the Arbiter for the purposes of requesting the Arbiter's determination in accordance with Section 27.10 above. Any such claim shall state as fully as then possible all information relating thereto and shall be supported by any then available documentation, including daily records showing all costs incurred. Such information shall be supplemented with any and all further information, including information relating to the quantum of losses or damages sustained, as soon as practicable after the information becomes or reasonably should become known to the Contractor.

(b) Any claim for compensation or monetary damages, the successful prosecution of which necessarily depends upon a technical determination favorable to Contractor, may not proceed unless and until Contractor first obtains such a favorable determination with respect to the technical issue and must be made within ten (10) days of such determination; moreover, Contractor must submit to the Arbiter any documentation or proof in support of the monetary claim within fifteen (15) days of such determination in order to proceed with such a claim. This written notice shall constitute Contractor's submission to the Arbiter for the purposes of requesting the Arbiter's determination in accordance with Section 27.10 above.

(c) Compliance with the provisions hereof shall constitute a condition precedent to the Contractor's submission of a Dispute pursuant to Section 27.10 with respect to any claim for compensation or monetary damages and the Contractor shall be deemed to have waived any claim not submitted in accordance herewith.

(d) Any final determination of the Arbiter with respect to a Dispute initiated pursuant to this Article 27 shall be subject to review solely in the form of a challenge following the decision by the Arbiter in a Court of competent jurisdiction of the State of New York, County of New York, under Article 78 of the New York Civil Practice Law and Rules or a United States Court located in New York City under the procedures and laws applicable in that court, it being understood the review of such Court shall be limited to the question of whether or not the Arbiter's determination is arbitrary, capricious or lacks a rational basis. No evidence or information shall be introduced or relied upon in such proceeding which has not been duly presented to the Arbiter in accordance with this Article 27.

27.12 Limitation on Actions

(a) Subject to the provisions of Section 27.11, no action or proceeding shall lie or shall be maintained by Contractor against BPCA, Construction Manager, or Architect unless (i) such action or proceeding shall be commenced within six (6) months of the date of the issuance of the Certificate of Substantial Completion to Contractor; or (ii) in the case of an action or proceeding for monies due pursuant to Section 5.7 hereof, or arising exclusively from or pertaining exclusively to work performed after the date of issuance of the Certificate of Substantial Completion, unless such action or proceeding is commenced no later than six (6) months after the issuance of the certificate of final completion to Contractor; or (iii) if this Agreement is terminated by BPCA prior to the issuance of the Certificate of Substantial Completion, unless such action or proceeding is commenced within six (6) months after the date of such termination.

(b) Nothing in this Section 27.12 shall be construed to modify or lengthen a shorter limitations period provided by applicable law.

(c) No action or proceeding shall be commenced by Contractor against BPCA, Construction Manager, or Architect except in the Supreme Court of the State of New York, County of New York.⁵¹ #26366880_v1

(d) Nothing in this Section 27.12 shall be construed to suggest that Contractor, under any circumstances, may bring an action or proceeding against Construction Manager, or Architect.

27.13 Waiver of Remedies

Contractor acknowledges that it can be compensated adequately by money damages for any breach of this Agreement which may be committed by BPCA, Construction Manager, or Architect. Contractor agrees that no default, act or omission of BPCA, Construction Manager, or Architect shall constitute a material breach of contract entitling Contractor to cancel or rescind this Agreement or to suspend or abandon performance thereof, other than the failure of BPCA to make a payment of the Contract Price in accordance with the terms hereof solely because sufficient funds to pay the Contract Price have not been appropriated or will otherwise not be made available to BPCA. Contractor hereby waives any and all rights and remedies to which Contractor might otherwise be or become entitled to because of any wrongful act or omission of BPCA, Construction Manager, or Architect except as provided in this Section 27.13 and Contractor's right to money damages.

27.14 Modification of Agreement

No change in or modification, termination or discharge of this Agreement in any form whatsoever shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith or its duly authorized representative, provided, however, that any change in or modification, termination or discharge of this Agreement expressly provided for in this Agreement shall be effective as so provided.

27.15 Signs and Parking

Contractor agrees that it shall not display on or about the Site any sign, trademark or other advertisement without the approval of BPCA and Construction Manager Contractor shall not and shall not permit any of its Subcontractors or Materialmen to park any vehicles on the Site.

27.16 Entire Agreement

The Contract Documents constitute the entire Agreement between the parties and incorporate all prior understandings in connection with the subject matter hereof.

27.17 Rights and Remedies

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by BPCA, Construction Manager, or Architect or Contractor including, but not limited to, the making of any payment or permitting Contractor to continue with the performance of the Work shall constitute a waiver of any right or duty afforded any of them under this Agreement, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

27.18 Participation in International Boycott Prohibited

Contractor agrees, as a material condition of this Agreement, that neither Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated or is participating or shall participate in an international boycott in violation of the provisions of the United States Export Administration Act of 1969, as amended, or the United States Export Administration Act of 1979, as amended, or the Regulations of the United States Department of Commerce promulgated thereunder. This Agreement shall be rendered forfeit and void by the Comptroller of the State of New York if, subsequent to execution, such person, firm, partnership or corporation has been convicted of a violation of the provisions of either of such federal acts or such Regulations or has been found upon the final determination of the United States Commerce Department or any other appropriate agency of the United States to have violated the provisions of either of such federal acts or such Regulations.52 #26366880_v1

27.19 Compliance with “Buy-American” Statutes

Contractor and any substantially owned or affiliated person, firm, partnership or corporation agrees to comply with the New York Public Authorities Law, Section 2603-A as amended (affects steel or steel products).

27.20 Permitted Successors

References to parties and entities herein shall be deemed to include their permitted successors.

27.21 MacBride Fair Employment Principles

If the amount payable to Contractor under this agreement is greater than \$15,000, Contractor hereby certifies that it and/or any individual or legal entity in which it holds a 10% or greater ownership interest, and any individual or legal entity that holds a 10% or greater ownership in it, either have no business operations in Northern Ireland; or shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Fair Employment Principles relating to nondiscrimination in employment and freedom of workplace opportunity regarding such operations in Northern Ireland, as set forth in New York State Finance Law Article XI Section 165(5), and shall permit independent monitoring of their compliance with such Principles.

27.22 Iran Divestment Act

By signing this contract, each person and each person signing on behalf of any other party certifies, and in the case of a joint bid or partnership each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each person is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law.

27.23 Termination for Failure to Disclose Under State Finance Law §139k

BPCA reserves the right to terminate this contract in the event it is found that the certification filed by Contractor pursuant to New York State Finance Law §139-k was intentionally false or intentionally incomplete. Upon such finding, BPCA may exercise its termination right by providing written notification to the Contractor in accordance with the written notification terms of this contract. If a contract is terminated in accordance with State Finance Law §139k(5), BPCA, its subsidiaries and affiliates, will include a statement in BPCA’s procurement record describing the basis for any action taken under the termination provision.

27.24 Labor Peace

The Contractor and its Subcontractors and Materialmen shall not employ on the Work any labor, materials or means whose employment, or utilization during the course of this Agreement, 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, Materialmen, or by any of the trades working in or about the buildings and premises where Work is being performed under this Agreement, or by other contractors or their subcontractors pursuant to other agreements, or on any other building or premises owned or operated by BPCA, its contractors or affiliates. Any violation by the Contractor of this requirement may be considered as proper and sufficient cause for declaring the Contractor to be in default, and for BPCA to take action against Contractor as set forth in Article 15 of this Agreement, or such other Section of this Agreement as BPCA may deem proper.

27.25 Comptroller’s Approval

If this Agreement is considered an “eligible contract,” as defined by New York Code, Rules and Regulations Title 2 Part 206.2, it is subject to the New York State Comptroller’s approval, and therefore shall not be valid and enforceable until that approval has been obtained. A contract is considered an “eligible contract,” as defined by Title 2 of NYCRR Part 206.2, if it is not a specifically exempt contract, is executed by a state authority on or after March 1, 2010 53 #26366880_v1

where the aggregate consideration under the contract may reasonably be valued in excess of one million dollars (including all reasonably anticipated renewals and amendments), AND the contract (A) was or shall be awarded on a single-source basis, sole-source basis or pursuant to any other method of procurement that is not a competitive procurement OR (B) shall be paid in whole or in part with monies appropriated by the State, either directly to a state authority or to a state agency which pays the money to a state authority.

27.26 Key Person/Personnel

The parties understand that in entering into this Agreement, BPCA has relied upon Contractor's representation that [name(s) and title(s)] (hereinafter the "Key Personnel") will be directly and consistently involved in supervising the Work and actively engaged in the day-to-day management of the Work, which shall include attending mandatory Project meetings. If the Key Personnel is/are not available as described herein, or if the Key Personnel depart from the firm or severs his/her/their relationship with the Contractor, or for whatever other reason is/are not available to work on the Project, then BPCA shall have the right to terminate this Agreement. The parties also agree that at any time during the course of the Work, BPCA may designate additional or substitute key personnel to perform the Work. Contractor agrees to make the additional or substituted key personnel available under the same conditions set forth herein.

27.27 Form of Agreement Not an Offer

Notwithstanding anything herein to the contrary, the submission of this form of Agreement by BPCA to Contractor shall not constitute an offer, and execution hereof by Contractor shall not be considered acceptance of an offer. A binding contract between the parties shall exist only if and at such time as both parties have executed this document.

27.28 General Responsibility

(a) The Contractor shall at all times during the Agreement term remain responsible. The Contractor agrees, if requested by BPCA or its designee, to present evidence of Contractor's continuing legal authority to do business in New York State, integrity, experience, ability, prior performance, and organizational and financial capacity.

(b) BPCA or its designee, in its sole discretion, reserves the right to suspend any or all activities under this Agreement, at any time, when BPCA discovers information that calls into question the responsibility of Contractor. In the event of such suspension, Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, Contractor must comply with the terms of the suspension order. Activity under the Agreement may resume at such time as BPCA or its designee issues a written notice authorizing a resumption of performance under the Agreement.

(c) Upon written notice to the Contractor, and a reasonable opportunity to be heard with appropriate BPCA officials or staff, the Agreement may be terminated by BPCA or its designee at Contractor's expense where Contractor is determined by BPCA or its designee to be nonresponsible. In such event, BPCA or its designee may complete the contractual requirements in any manner BPCA may deem advisable and pursue available legal or equitable remedies for breach.

SIGNATURE PAGE FOLLOWS54 #26366880_v1

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, as of the date first above written.

BATTERY PARK CITY AUTHORITY, d/b/a

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

By: _____

Name: _____

Title: _____

CONTRACTOR NAME

By: _____

Name: _____

Title: _____

FEIN # _____

EXHIBIT D

COST PROPOSAL

(Proposer to submit executed Cost Proposal on its letterhead)

Date:

Battery Park City Authority
One World Financial Center - 24th Floor
New York, New York 10281

Attention: Mr. Michael LaMancusa
Contracts Administrator

Dear Mr. LaMancusa,

The undersigned (the "Proposer") hereby proposes to provide all specified work necessary to perform the work for the **Phase 3 Pile Remediation - Location 1 - Winter Garden**. The Proposer agrees to commence the Work immediately upon receipt of the Initial Letter of Intent in accordance with the terms stipulated in the following pages, for the sum written below.

A. Base Proposal

A total Not to Exceed amount of \$_____ (_____ Dollars and _____ Cents) to perform all Work as described in the Authority's Request for Proposals for the Scope of Work (Exhibit A).

B. Itemized Proposal and Labor Rates

1. The Proposer has submitted with its proposal an itemized cost for the Work, according to the attached schedule of items, for the Scope of Work in Appendix V.
2. The Proposer has submitted with its proposal, labor rates for all trades, including all costs except overhead and profit. Prices shown include base hourly rate, overtime rate, insurance and benefits.

Name of Proposer:

By: _____

Title: _____

EXHIBIT E

LABOR RATES

(See attached)

LABOR RATES

The following labor rates are to be listed by craft and classification (Foreman, Journeyman, etc.) and are to include base wages, benefits, taxes, insurance and payroll costs complete. Overhead and profit are not to be included:

<Name of Company>
<Name of Proposer>

Signed _____

Date _____

By: <Printed Name>

EXHIBIT F

Trade Payment Breakdown

Bid Item	EST. QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
Mobilization / Demobilization	1	LS		
General Conditions	1	LS		
Performance Bond	1	LS		
Protective Pile Encasements	1,695	LF		
Structural Pile Encasements*	35	LF		
Backwall Corner Encasement	15	LF		
Backwall Three Side Encasement	280	LF		
Excavation – Soft Bottom	189	EA		
Excavation – Hard Bottom	154	EA		
Riprap Obstruction Detail	48	EA		
PROJECT TOTAL				

Note: PROJECT TOTAL price must equal total bid price shown above ADD/DEDUCT (NOT APPLICABLE).

ADD / DEDUCT	EST. QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
N/A	N/A	N/A	N/A	N/A
PROJECT TOTAL				N/A
ADD/DEDUCT				N/A

Note: The estimated quantities listed in the proposal are approximate only and given as a basis for the uniform comparison of bids. The Owner does not expressly or by implication agree that the actual amount of Work or items listed will correspond therewith. The Contract Not To Exceed bid shall include all Work required in order to complete the project, even if not specifically mentioned.

PROJECT TOTAL price must equal total bid price shown under ADD/DEDUCT. The ADD/DEDUCT indicates the difference in total price between Alternates / Value Engineering.

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EXHIBIT G

Specifications (Attached)

**Battery Park City Authority – 2014 Pile Remediation
Construction Management Services & Diving Inspection
New York, New York**

INDEX OF SPECIFICATIONS

00005 - General Conditions
01110 - Summary of Work
01140 - Work Restrictions
01310 - Project Management and Coordination
01320 - Construction Progress Documentation
01330 - Submittal Procedures
01450 - Quality Assurance
01525 - Safety Requirements
01575 - Temporary Environmental Controls
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01710 – Cleaning
01770 - Closeout Procedures
02100 - Site Work General Provisions
02220 – Demolition
02880 - Marine Construction
03310 - Concrete Pile Jacketing and Grouting
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SECTION 00005
GENERAL CONDITIONS
("TITLE")

1. GENERAL

Notwithstanding anything in the other Contract Documents to the contrary, including the Specifications, all provisions hereof shall supersede any conflicting provisions in other Contract Documents. All other provisions of the Contract Documents shall remain in full force and effect. References to the "Authority" in these Conditions shall be deemed to mean "Owner/Owner's Representative" and vice versa.

2. CONDITIONS

- 2.1 Should questions of labor jurisdiction arise, this Proposer will immediately take steps to settle such disputes and will use such labor as may be determined to have jurisdiction, at no additional cost to the Owner. Should it fail to take expeditious action, it will be responsible for any time lost because of delays arising from such disputes.
- 2.2 All permits required for any part of the Proposer's work shall be procured and paid for by Proposer. This shall apply also to those permits required to be obtained in the name of the Authority.
- 2.3 The (G) General Contractor shall pay for and obtain any and all releases, permitting Owner unrestricted use of the Work.
- 2.4 The Contract includes the cost of all standby trades and Owner Representative fees should Proposer work prior to or later than normal working hours and on Saturdays, Sundays, and Holidays, if Proposer desires to work outside of normal working hours.
- 2.5 Proposer shall comply with all legal regulations, including OSHA safety regulations and other government agencies having jurisdiction concerning the Work of this Contract.
- 2.6 Proposer shall comply with all federal and local laws regarding noise control. Mufflers and whispered compressors shall be used throughout Proposer's Work.
- 2.7 Proposer has examined the site and the Contract Documents. Proposer agrees that the site and surrounding areas are satisfactory and sufficient for its needs in the prosecution of its work in conformance with the terms of this Contract.
- 2.8 Any temporary and/or permanent power connections required for the execution of the Proposer's Work and/or in connection with the Proposer's Work shall be the responsibility of the Proposer, including restoring all existing conditions that are disturbed during the performance of the work to like new status.
- 2.9 This Agreement covers the complete scope for the type of work included herein, including all incidental work not necessarily indicated or described in the "scope" documents. This Agreement is let on the basis of such documents with the understanding that the Proposer is to furnish all items required for proper completion of the work without adjustment to the Contract Price. It is intended that the Work be of sound and quality installation and the Proposer shall be solely responsible for the inclusion of adequate amounts to cover installation of all items indicated, described or implied.
- 2.10 Contractor shall maintain hours of operation between 7:00 am to 4:30 pm, Mon-Fri and weekends as necessary. Temporary protection is to be coordinated with Owner/Construction Manager or as

otherwise noted. Work must be in accordance with all city, state and local jurisdiction agencies and authorities as well as Battery Park City Requirements.

- 2.11 Proposers shall use ultra-low sulfur diesel fuel or compressed natural gas (CNG) for all construction vehicles with a carrying capacity in excess of 5 tons and for all portable generators, consistent with Local Law 77 for Lower Manhattan. All diesel engines of greater than 50 horsepower must use ultra-

BATTERY PARK CITY GENERAL CONDITIONS 00005 ESPLANADE REPAIRS MARCH 2014 1 OF 3

- low sulfur diesel fuel with a sulfur content no greater than 15 ppm. Equip the above vehicles with high performance engines and diesel oxidation catalyst (DOC) filters or another previously demonstrated advanced retrofit technology, consistent with NYC Local Law 77 for Lower Manhattan. On-road vehicles used in construction may not idle for more than five consecutive minutes except under practical considerations such as during vehicle maintenance, while stopped in traffic, and in cold weather conditions below 25 degrees F.
- 2.12 Proposer shall not store any material or equipment on site unless directed by the Owner/Owner's Representative. The Proposer shall provide storage space for inspection dive equipment and provide access and material support for the inspection crews.
- 2.13 Proposer shall not use the site for staging of installation materials or equipment except as approved by the Owner.
- 2.14 All engineering layout is the Proposer's obligation.
- 2.15 Each Proposer is responsible for progress cleaning of its own areas on a daily basis. All Proposers are responsible for consolidating any debris caused by their work. The proposer for General Construction (G) shall be responsible for cleanup of the entire site which includes removal of debris for ALL proposers on site on a daily basis. The proposer for General Construction (G) shall legally dispose consolidated debris off-site. Each Proposer is advised that failure to comply with cleaning requirements will result in backcharges and /or reductions in payments.
- 2.16 Contractor shall perform site cleanup and removal of debris on a daily basis and broom clean all installation areas at completion of the day. Surplus equipment, parts & installation materials are to be removed by contractor upon completion of installation unless it is mutually agreed, in writing, from Owner or the Construction Manager that this material can remain on site.
- 2.17 Proposer shall submit within 30 calendar days from Contract or Notice to Proceed, unless otherwise noted, all shop drawings and samples required to the Owner's Representative for approval. Substitutions are frowned upon. Proposers shall meet the design intent without deviation.
- 2.18 Proposer shall submit within two (2) weeks after receipt of Contract or Notice to Proceed a detailed schedule to the Owner's Representative conforming with the project milestone installation dates.
- 2.19 NO access will be granted through the North Cove Marina; all access shall be through the access hatch at Location 1. The overall objective will be to perform the work with **minimal** to **no disruption** to the daily operation of the North Cove Marina. ALL work shall be staged from a barge at Location 2.
- 2.20 Requisitions for this project shall be due to the Owner by the 15th of every month in the format approved by the Owner.
- 2.21 The Proposer shall follow any and all anti-terrorism security procedures, guidelines, instructions, and regulations with respect to ingress into and egress from the work site, transportation and disposition of material that might be considered contraband as well as any emergency procedures. It is the Proposer's responsibility to make contingencies for the effect upon the scheduling and performance of their work of any and all such regulations and procedures. The cost of such contingencies shall be included in the Contract Price.

- 2.22 The Proposer shall take special care to provide for temporary damage protection for any and all existing conditions to remain in proximity to the work area. The protection shall remain in place while performing the work shown or described herein or elsewhere in the Contract Documents. Any damage to existing conditions to remain as a result of work by the Proposer shall be repaired or replaced to the satisfaction of the Owner and at no cost to the Owner.
- 2.23 As a State Agency, Proposer shall be aware, that all BPCA projects require the employment of labor at prevailing wage rates. Outside State and Federal Agencies will closely monitor all projects.

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- 2.24 Proposer shall conduct a “Project Site Visit” prior to submitting a proposal, to familiarize themselves with the Area of Work and the surrounding areas and submit clarifications as such per Appendix IX.
- 2.25 Contractor shall be responsible to meet all project milestone dates, if the contractor does not meet the milestone dates or is progressing behind schedule, the contractor will be directed by the Owner/Construction Manager to work weekends, in order to ensure substantial completion no later than project closeout date. Contractor shall be subject to liquidated damages in the amount of \$10,000.00/day, for each calendar day beyond project closeout for which the proposed work is incomplete. The project milestone dates are as follows:
- 1) Contractor to complete Shop Drawings: April 2014
 - 2) Construction Start: May 1, 2014
 - 3) Substantial Completion: October 2014
 - 4) Punch List Walk-through: October 2014
- 5) Final Inspection of Punch List: October 31, 2014
- 2.26 Contractor shall be required to submit an original certificate of insurance to the Construction Manager one week prior to commencement of contracted work
- 2.27 Contractor shall be responsible for on-site security of all tools, equipment, stored materials and installation materials until final acceptance by Battery Park City Authority.
- 2.28 Contractor shall be responsible for providing all equipment required for unloading, installation, clean-up and hauling of debris. Contractor is to be aware that due to the spacing limitations of the surrounding area of work there is to be no staging of equipment on site.
- 2.29 Contractor shall be responsible for snow and frost removal at site during construction in order to accommodate performance of work.
- 2.30 Proposer shall include as outlined in the cost proposal a daily rate to tent & heat the area of work to the required temperature as needed.
- 2.31 Contractor shall be responsible to perform field verification of all dimensions indicated on the contract documents, as well as any dimensions required to properly perform the work.
- 2.32 Contractor shall be required to submit an installation plan for approval by the Owner and Construction Manager prior to commencement of the work.
- 2.33 Contractor shall provide interim as-built documents in pdf format and a hard copy with each application for payment. These will be incorporated into the final as-built documentation.
- 2.34 Contractor is to be aware that although certain Drawings pertain to particular phases of the work, there is an overlap. Contractor shall review all Drawings prior to start of each phase.
- 2.35 The contractor is responsible for coordination of their work between the Engineer and the Dockmaster. In keeping with the project philosophy of “Zero Impact” on Marina operations, Contractor shall keep the interruption of quay services and access to moored vessels, their crews and passengers to a minimum.

2.36 Contractor shall not use the site for staging of construction materials or equipment. The barges shall be subject to the applicable federal, state and local ordinances in addition to the marina regulations.

2.37 The work by the Contractor shall conform to the applicable section of the New York City Noise Code regarding the sound level standards and the time and duration of construction activities.

END OF SECTION 00005

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SECTION 01110
SUMMARY OF WORK
PART I - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Description

The work covered in this project includes all materials, labor, and equipment necessary for the Esplanade Repairs at Battery Park City, Manhattan, NY.

B. In general, the work at the site includes, but is not limited to, the following:

1. Install environmental control booms and silt curtains around work area.
2. Remove and re-install the access hatch and soil (Location 1 only).
3. Demolition, removal, and disposal of loose and unsound concrete from the concrete piles and adjacent structures necessary for the repair or protection of the concrete piles as shown on the Contract Drawings.
4. Install temporary shoring as required for safety and to protect embankment from erosion.
5. Protect concrete piles with a formed and poured-in-place pile protection epoxy grout system, or repair concrete piles with a reinforced, formed and poured-in-place concrete pile repair system.
6. Remove temporary formwork, shoring, backfill excavations, and install additional riprap as necessary.
7. Remove environmental control booms and silt curtains.

1.02 EXISTING WORK

- A. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work that remains.
- B. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Owner. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

1.03 LOCATION OF UNDERGROUND FACILITIES

- A. Scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground where existing underground utilities are discovered. Verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated or specified to be removed but indicated or discovered during scanning in locations where other work is to be installed.

B. Coordinate with the Owner on the location of underground utilities and which utilities are to remain and be protected, and which are to be removed.

C. Notify the Owner at least 24 hours prior to starting excavation work.

1.04 QUALITY ASSURANCE

A. Use adequate number of skilled work personnel who are thoroughly trained and experienced in the necessary trades, and familiar with the specified requirements and methods required for proper performance of the work outlined in this specification.

B. The Contractor shall coordinate the work to insure no conflicts occur to compromise the timely completion of all work specified.

1.05 WORKING CONDITIONS

A. The Contractor is responsible for any precautions and scheduling necessary in order to maintain this status. Work may begin only after a schedule representing an acceptable plan is approved by the Owner.

B. The Contractor shall coordinate day-to-day activities with the Owner. All conflicts will be resolved by the Owner's representative.

C. The Owner shall be notified a minimum of two days prior, when any moored vessels are required to carry out along the esplanade work. The Owner shall be notified a minimum of one week prior, when any moored vessels are required to carry out work in the north cove or in the vicinity of the ferry terminals.

1.06 WORKING HOURS

A. The Contractor is permitted to perform construction work between the hours of 7:00 AM and 4:30 PM Mondays through Fridays, excluding Saturdays, Sundays, and Federal Holidays. Work performed at any other time other than these periods will only be allowed pending approval of the Owner, following a 48 hour advanced request (72 hour for Sundays and Holidays).

1.07 AVAILABILITY OF UTILITIES

A. Electrical: The Contractor shall provide its own electrical power and equipment. OSHA requirements will govern the use of such utility.

B. Water: The Contractor will be responsible for supplying its own water and equipment, including all hoses, adapters and backflow preventer as required.

C. Sanitary Facilities: The Contractor shall be responsible for furnishing and maintaining temporary toilet facilities for their employees.

D. The Contractor is responsible for the cost of all utilities.

1.08 EQUIPMENT

A. The Contractor shall supply all equipment necessary to perform all work, including but not limited to cleaning materials, ladders, etc.

1.09 RECEIPT OF MATERIALS

- A. Shipments of equipment, materials, and supplies shall be addressed to the Contractor, not the Owner. The Contractor shall provide all equipment, materials and labor for off-loading. The Owner will not accept shipments for the Contractor.

1.10 STORAGE OF MATERIALS

- A. Contractor's materials may be stored on site at a location that is approved by the Owner.

1.11 EXISTING MATERIALS

- A. The Owner shall have the opportunity to salvage all materials removed prior to disposal by Contractor.

1.12 DEFINITIONS

All abbreviations used in this specification shall pertain to the following:

ANSI: American National Standards Inst. Inc.

1430 Broadway

New York, NY 10018

APD/DEPA: American Plywood Association

Douglas Fir Plywood Association

1119 "A" Street

Tacoma, WA 98401

ASTM: American Society for Testing and Materials

1916 Race Street

Philadelphia, PA 19103

AWPB: American Wood Preservers Bureau

P. O. Box 6085

Arlington, VA 22206

AWPA: American Wood Preservers Association

7735 Old Georgetown Road

Bethesda, MD 20714

EPA: Environmental Protection Agency

Public Information Center

401 "M" Street, SW

Washington, DC 20460

NEC: National Fire Protection Association National Electrical Code

470 Atlantic Avenue

Boston, MA 02210

NFPA: National Fire Protection Association

60 Battery March Street

Boston, MA 02210

NWMA: National Wood Manufacturers Association

205 West Touhy Avenue

Park Ridge, IL 60068

OSHA: Occupational Safety Health Administration

U.S. Department of Labor

Government Printing Office

Washington, DC 20402

PS: Product Standard of NBS

Government Printing Office

Washington, DC 20402

UL: Underwriters Laboratory, Inc.

207 East Ohio Street

Chicago, IL 60611

1.13 SITE OFFICE FACILITIES AND STORAGE SHED

- A. The Contractor shall be required to provide at his own cost and expense two office trailers with equipment having the minimum requirements hereinafter specified. Install and connect all utility services to said trailers within twenty (20) days of start of work.
- B. One trailer shall be for use by the Contractor, the other for use by the Resident Engineer. The trailers shall remain the property of the Contractor.
- C. Trailers provided by the Contractor shall meet the following specifications:
 1. Trailers shall be office type trailers of the following general minimum dimensions:
 - Length, overall 35 feet
 - Length, inside 32 feet
 - Width, overall 8 feet
 - Width, inside 7 feet, 5 inches
 2. Trailers shall be similar or equivalent to that manufactured by International Trailer Company, Model No. 1 MU-35-D or Atlantic Trailer Corp., Model No. F-36.
 3. The exterior of the trailers shall be given an exterior enamel finish coat of DuPont Orange Lacquer. Trailers shall be lettered with black block lettering having white borders as follows:
 - Contractors name 2-1/2"
 - Hugh L. Carey Battery Park City Authority 3-3/4"
 - Contractors and Resident Engineers Office 2-1/2"

Note: In lieu of painting letters on trailers, the Contractor may substitute a sign constructed of good quality lumber with lettering of the same type and size.
 4. All windows and doors shall have insect aluminum screens and wire mesh protective screening.
 5. Interior shall be of 1/4-inch plywood and finished in natural color, with two coats of varnish or lacquer.

6. Interior shall be divided by partitions into one large room in front of trailer, and a lockable private office for the Resident Engineer approximately 6 feet by 7 feet 5 inches at rear of trailer, and a washroom located adjacent to the private office.
 7. Washrooms shall be equipped with a flush toilet wash basin with two faucets, and a medicine cabinet, complete with supplies, equivalent to Hospital Supply and Watters Labs., Inc., Model No. 1, and a toilet roll tissue holder. Plumbing and fixtures shall be approved house type, with each appliance trapped and vented, and a single discharge connection. A 5-gallon capacity automatic electric heater for hot water shall be furnished.
 7. Heating systems shall consist of thermostatically controlled electric baseboard heating capable of delivering not less than 30,000 BTU per hour. Heaters shall be as manufactured by Chromalux, size per area with individual approved thermostats or approved equivalent.
 8. Trailers shall be equipped with an approved six-circuit, 110-120 volt armored cable wiring system of adequate capacity complete with entrance connector with provision for grounding, enclosed fused service switch and branch circuit fuse box. The circuit for lighting shall be two-conductor No. 12 and the circuits for water heater, heater, convenience outlets, etc., shall be two-conductor No. 12. The circuits for the space heaters shall be sized minimum No. 12 wire led from individual circuits in the branch circuit fuse box. Metal boxes shall be provided at all outlet points. All wiring shall conform to the requirements of the Electrical Code of the City of New York for armored cable wiring systems.
 9. Lighting to be furnished by a minimum of 4-48 inch single tube fluorescent fixtures for the large rooms and incandescent fixture for the washroom. Lighting fixtures shall be provided with built-in pull chain switches. A minimum of six duplex convenience outlets shall be installed, four in the larger room and two in the smaller room. These outlets shall be in addition to connections for space electric heaters and water heater.
- D. The following shall also be “built-in” to the Resident Engineer’s trailer:
1. Drafting or reference table at least 60 inches long by 36 inches wide, with cabinet below, and head shelf at each end of the trailer, wall type plan rack at least 42 inches wide, with wardrobe opposite washroom.
- E. The Resident Engineer’s trailer shall be furnished with the following equipment:
1. Four single pedestal desks, 42” x 32”. Two swivel chairs with arms, and three side chairs without arms to match desk. Four lockers, metal, olive green or gray, single units, 15” x 18” x 78” overall including 6” legs. Lockers to have flat key locks with 2 keys each, General Steel Products or equivalent. Two (2) vertical steel filing cabinets, 4 drawer legal size with locks, full ball bearing suspension. Size approximately 52” H x 28 1/2” D x 18” W, gray finish. Art Steel No. 2904L as manufactured by the Art Steel Company, Inc., located at 170 West 23rd Street, New York, or approved equivalent.
 2. One 6000 BTU and one 9000 BTU air conditioners. Wiring for air conditioners shall be minimum No. 12 AWG fed from individual circuits in the fuse box.
 3. Two waste baskets, metal, olive green or gray, 13 inches square 15 inches high, with rubber feet and corners. Art Metal Company, No. 168 or equivalent.
 4. One fire extinguisher, 1-quart vaporizing liquid type, brass, wall mounted. Pyrene No. C21, or equivalent.

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5. One Crystal Springs water cooler Model No. LP 14058, furnish for the duration of the contract bottled water as required.
 6. Contractor shall provide a copy machine for paper sizes 8-1/2" x 11" & 8-1/2 " x 14". Copier shall stay at job site 30 days beyond the Substantial Completion date.
- F. Trailer Temporary Services: Plumbing, heating and electrical work required for the trailers will be furnished and maintained under this contract.
1. Plumbing work: Shall include all water supply and drainage piping required for a complete installation. Provide a temporary water service from the City's water main and extend in the trailer and properly connect all fixtures requiring water supply. Provide all necessary soil, waste, vent and drainage piping.
 2. Frost proof all water pipes to prevent freezing.
 3. Repairs and maintenance: Plumbing work shall be repaired when and as required for a period of thirty (30) days after the date of substantial completion acceptance.
 4. Disposition of plumbing work: At the expiration of the time limit set forth in subparagraph 3, the water drainage connections and piping to the Office Trailer shall be removed and shall be plugged at the mains.
 - a. All piping shall become the property of the contractor and shall be removed from the site as directed.
 - b. The Contractor shall be responsible for all repair work due to these removals.
 5. Electrical work: The Contractor shall furnish, install and maintain a temporary electric feeder to the Resident Engineer's Trailer immediately upon its placement at the job site.
 - a. The temporary electric feeder shall be at least 3 No. 6 THW wire and shall be protected by a 60 ampere fused safety switch, complying with codes and utility requirements having jurisdiction.
 - b. Make all arrangements and pay all costs to provide electric service.
 - c. Pay all costs for current consumed and for maintaining system in operating condition, including furnishing of necessary bulb replacements, lamps, etc., for thirty (30) days after date of substantial completion acceptance.
 - d. Disposition of electric work: Upon expiration date in sub-paragraph c, the temporary feeder, safety switch, etc., shall be removed and disposed of as directed.
 - e. All repair work due to these removals shall be the responsibility of the Contractor.
- G. Maintenance
1. The Contractor shall provide and pay all costs for hot and cold water, heat and fuel, and regular daily janitor service. Furnish toilet paper, cloth towels, soap, and maintain the field office in first-class condition, including all repairs, until 30 days after the date of substantial completion acceptance.

2. Upon final acceptance of all work under the contract, unless sooner directed, the Contractor shall have all services disconnected and capped to the satisfaction of the Resident Engineer.
- H. The Contractor shall provide and pay all costs for the following telephone services for the Resident Engineer's Trailer:
 1. Two (2) desk phones
 2. One (1) fax machine
 3. A remote bell located outside trailer
 4. The telephone service shall continue for a period of thirty (30) days following substantial completion.
- I. Should it become necessary to relocate the trailers or move the field office from one location to another, the Contractor shall be responsible for all moves and for reconnecting all utilities described above at new location, and shall assume all costs incurred.
- J. Permits: The Contractor shall make the necessary arrangements for, and obtain all permits required for this work.
- K. The Contractor shall provide his own storage shed or trailer. No equipment or materials storage will be provided by the Owner.

1.14 POWER OUTAGE

- A. Needed power outages shall be arranged only with prior approval from the Owner, with duration and affected areas held to a minimum.

1.15 SITE VISIT

- A. Offerors or quoters are urged and expected to inspect the site where services are to be performed and to satisfy themselves regarding all general and local conditions that may affect the cost of contract performance, to the extent that the information is reasonably obtainable. In no event shall failure to inspect the site constitute grounds for a claim after contract award.

1.16 FINAL INSPECTION

- A. Final Inspection will not be made until all work under the contract is complete. The Contractor shall notify the Owner in writing 48 hours prior to the date on which the project will be ready for final inspection.

1.17 DUMPING AREA

- A. All discarded material shall be removed from the Owner's property and disposed of in an approved site complying with Local, State, and Federal regulations. Certified weight tickets shall be supplied to the Owner within 15 days of the date of the weight ticket for all trash and construction debris disposed. All dumpsters/containers shall be supplied by the Contractor. The contractor shall provide appropriate signs or covers to prevent use by Tenants.
- B. No material shall be washed or swept out of equipment or vehicles (including concrete from

chutes of trucks, loose debris, etc.) onto Owner property or in the water. Any material spilled from Contractor furnished dumpsters/containers shall be immediately cleaned up by the Contractor.

1.18 RECYCLABLES

A. The Contractor shall recycle or reuse all material designated as recyclable or prohibited from landfilling. Definitions for recyclables and landfill prohibited material can be obtained from the contracted trash hauler. Certified weight tickets shall be supplied to the Owner within 15 days of the date of removal from the facility for all material recycled or reused, and for landfill prohibited materials.

1.19 AS-BUILT DRAWINGS

A. The Owner will furnish one complete set of black and white prints of all drawings which shall be used to indicate any changes from the contract set. Each sheet shall be marked "AS-BUILT DRAWINGS" in red pencil, and all changes or modifications shall be noted thereon by the Contractor.

B. Changes shall be noted during the construction process for all trades.

C. Keep "AS-BUILT DRAWINGS" current. Do not permanently conceal any work until the required information has been accurately recorded.

D. Use colored pencils or pens for graphic work conforming to the following color code:

Red - Architectural and Structural Work

Green - Electrical Work

Use blue pen for written work

E. Submit a complete set of "AS-BUILT DRAWINGS" to the Owner when all work has been completed, or as directed.

PART II - PRODUCTS

Not used.

PART III - EXECUTION

Not used.

END OF SECTION 01110

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SECTION 01140
WORK RESTRICTIONS
PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to this section.

1.02 USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to those areas delineated as included in the Construction Documents.
2. Owner Occupancy: Allow for Owner occupancy of portions of the site and for use by the public at any and all times during the life of the contract. The Owner reserves the right to maintain and provide full public access to completed portions of the Battery Park City Esplanade within the contract limits at any time during the entire life of the contract. Contractor will be responsible for securing and maintaining temporary construction fencing as necessary to achieve and maintain this access.
3. Contractor shall, throughout the life of the contract, maintain clear access to all areas of the Esplanade to personnel of Battery Park City Authority (Owner) for maintenance and repair operations. Specifically, the Owner and/or its agents shall be unencumbered from performing all required watering, planting, and maintenance operations for all areas adjacent to and within the contract limits.
4. Construction Gates / Entrances: Keep all construction gates / entrances serving the premises clean, clear and available to the Owner, Owner's employees, emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of construction gates and entrances.
 - b. Schedule deliveries to coordinate with other contractor's gaining access to the site.
 - c. Provide flag-person services for all deliveries into and out of the site so as to protect the public, at the discretion of the Construction Manager.
 - d. Secure all construction entrances and gates to the site at all times.
 - e. Provide durable signage limiting public access to the construction site at all construction gate / entrances as directed by the Construction Manager.
 - f. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Use of Existing Site: Maintain existing site throughout the construction period. Repair damage caused by construction operations.

1.03 OCCUPANCY REQUIREMENTS

- A. Partial Owner Occupancy: Owner may occupy portions of the site during the construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

PART II – PRODUCTS

Not used.

PART III – EXECUTION

Not used.

END OF SECTION 01140

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SECTION 01310
PROJECT MANAGEMENT AND COORDINATION
PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to this section.

1.02 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
1. General project coordination procedures.
 2. Conservation.
 3. Coordination Drawings.
 4. Administrative and supervisory personnel.
 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
1. Division 1 – Section “Construction Progress Documentation” for preparing and submitting the Contractor’s Construction Schedule.
 2. Division 1 – Section “Execution Requirements” for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 3. Division 1 – Section “Closeout Procedures” for coordinating Contract closeout.

1.03 COORDINATION

- A. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
 4. Provide detailed written construction work plans within 14 days in a format and containing information as requested by the Construction Manager.

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- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values for payment to completed work.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Pre-installation conferences.
 - 7. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work.

1.04 SUBMITTALS

- A. Coordination Drawings / Work Plans: Prepare Coordination Drawings and/or detailed work plans where careful coordination is needed for installation of products and materials fabricated by separate entities and/or as requested by the Construction Manager. Prepare coordination drawings and/or work plans where limited space availability necessitates utilization of space for efficient installation of different components.
 - 1. Indicate relationship of components shown on separate Shop Drawings and/or work plans.
 - 2. Indicate required installation sequences.
- B. Staff Names: Within 14 days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
 - 1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.05 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

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1. Project Manager: Submit resume confirming a minimum of 15 years of site construction experience.
2. Project superintendent: Submit resume confirming a minimum of 10 years of site construction experience.
3. Office Engineer: Submit resume confirming a minimum of 5 years of site construction experience.
4. Include special personnel required for coordination of operations with other contractors.

1.06 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner, and Construction Manager of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Construction Manager, and the Engineer, within 5 days of the meeting.

B. Pre-construction Conference: Schedule a pre-construction conference before starting construction, at a time convenient to Owner, Construction Manager and the Engineer, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Construction Manager, Engineer, and their consultants; Contractor and its superintendents; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing.
 - d. Designation of responsible personnel.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for processing Applications for Payment.
 - g. Distribution of the Contract Documents.
 - h. Submittal procedures.

- i. Preparation of Record Documents.
- j. Use of the premises.
- k. Responsibility for temporary facilities and controls.
- l. Parking availability.
- m. Office, work, and storage areas.
- n. Equipment deliveries and priorities.
- o. Testing and inspection requirements.

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- p. Required performance results.
 - q. Protection of construction personnel.
 - r. First aid.
 - s. Security.
 - t. Progress cleaning.
 - u. Working hours.
 - v. MBE/WBE compliance reporting requirements.
 - 3. Record significant conference discussions, agreements, and disagreements.
 - 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- C. Progress Meetings: Conduct progress meetings at biweekly intervals. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner, Construction Manager, and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1. Interface requirements.
 - 2. Sequence of operations.
 - 3. Status of submittals.
 - 4. Deliveries.
 - 5. Off-site fabrication.
 - 6. Access.
 - 7. Site utilization.

8. Temporary facilities and controls.
9. Work hours.
10. Hazards and risks.
11. Progress cleaning.
12. Quality and work standards.
13. Change Orders.
14. Documentation of information for payment requests.

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3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- D. Coordination Meetings: Conduct Project coordination meetings as needed. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
 1. Attendees: In addition to representatives of Owner, Construction Manager, and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract time.
 - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report for each meeting.
 - c. Review present and future needs of each contractor present, including the following:
 1. Interface requirements.
 2. Sequence of operations.
 3. Status of submittals.
 4. Deliveries.
 5. Off-site fabrication.
 6. Access.
 7. Site utilization.
 8. Temporary facilities and controls.
 9. Work hours.

10. Hazards and risks.
11. Progress cleaning.
12. Quality and work standards.
13. Change Orders.

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3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART II – PRODUCTS

Not used.

PART III – EXECUTION

Not used.

END OF SECTION 01310

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SECTION 01320
CONSTRUCTION PROGRESS DOCUMENTATION
PART I - GENERAL

1.01 SUBMITTALS

Submit the following in accordance with Section entitled "Submittal Procedures."

A. Schedules

1. Construction schedule (Owner)
2. Material delivery schedule (Owner)

1.02 CONSTRUCTION SCHEDULE

Within 10 days after receipt of the Notice of Award, prepare and submit to the Owner's representative for approval a Critical Path Method (CPM) Schedule.

1.03 MATERIAL DELIVERY SCHEDULE

A. Initial Schedule

Within 30 calendar days after approval of the proposed construction schedule, submit for Owner's representative approval a schedule showing procurement plans for materials and equipment. Submit in the format and content as prescribed by the Owner's representative, and include as a minimum the following information:

1. Description.
2. Date of the purchase order.
3. Promised shipping date.
4. Name of the manufacturer or supplier.
5. Date delivery is expected.
6. Date the material or equipment is required, according to the current construction schedule.

1.04 NETWORK ANALYSIS SYSTEM (NAS)

- A. As an alternative to the critical path method (CPM) schedule, the Contractor may use, subject to the approval of the Owner's Representative, some other computer generated network analysis system affording similar and equal information and control to that provided by the CPM.
- B. The schedule shall have a minimum of 25 activities and a maximum of 200 activities. The schedule shall identify as a minimum:

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1. Construction time for all major systems and components;
2. Manpower requirements for each activity;
3. Major submittals and submittal processing time; and
4. Major material and equipment lead time.

C. CPM Submittals and Procedures

Submit all network analysis and updates in hard copy. Also submit CPM network schedule on 3-1/2 inch high density (1.4 MB) floppy disks. The network analysis system shall be submitted in a format acceptable to the Owner and be capable of running on an IBM compatible computer (IBM is a registered trademark of International Business Machines), operating with MS DOS 3.3 or later or "Windows" 3.0 or later. The network analysis system shall be kept current, with changes made to reflect the actual progress and status of the construction.

1.05 UPDATED SCHEDULES

Update the construction schedule and material delivery schedule at monthly intervals or when schedule has been revised. Reflect any changes occurring since the last update. Submit copies of the purchase orders and confirmation of the delivery dates as directed by the Owner's representative.

PART II - PRODUCTS

Not used.

PART III - EXECUTION

Not used.

END OF SECTION 01320

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SECTION 01330
SUBMITTAL PROCEDURES
PART I - GENERAL

1.01 DEFINITIONS

- A. Submittals consist of shop drawings, product data, samples, and administrative submittals presented for review and approval. All sections of the Construction Contract, General Conditions and Supplemental Conditions apply to all "submittals."
- B. All submittals are classified as indicated in the paragraph "Schedule of Submittal Descriptions." The submittals also are grouped as follows:
 - 1. Shop drawings: As used in this section, drawings, schedules, diagrams, and other data prepared specifically for this Contract, by the Contractor or through the Contractor by way of a subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate a portion of the work.
 - 2. Product data: Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate a portion of the work, but not prepared exclusively for this Contract.
 - 3. Samples: Physical examples of workmanship, products, materials, assemblies or equipment that are physically identical to a portion of the work, depicting a portion of the work or establishing standards for evaluating the appearance of the finished work or both.
 - 4. Administrative submittals: Data presented for reviews and approval to ensure that the administrative requirements of the project are adequately met but not to ensure directly that the work is in accordance with the design concept and in compliance with the Contract documents.
- C. Approving Authority is the person authorized to approve a submittal.
- D. Work, as used in this section, on- and off-site construction required by the Contract documents, including labor necessary to produce the construction and materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.02 PROCEDURES FOR SUBMITTALS

- A. The QC organization shall be responsible for reviewing and certifying that submittals are in compliance with contract requirements. The approving authority on submittals is the QC Manager unless otherwise specified for the specific submittal. At each "Submittal" paragraph in the individual specification sections, the notation "Owner," following a submittal item, indicates the Owner's Representative is the approving authority for that submittal item.
- B. Constraints
 - 1. Submittals listed or specified in this Contract shall conform to the provisions of this section, unless explicitly stated otherwise.

2. Submittals shall be complete for each definable feature of work; components of the definable feature interrelated as a system shall be submitted at the same time.
3. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, the submittal will be returned without review.
4. Approval of a separate material, product, or component does not imply approval of assembly in which the item functions.

C. Scheduling

1. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of the work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.
2. Except as specified otherwise, allow a review period, beginning with receipt by the approving authority, that includes at least 15 working days for submittals for QC Manager approval and 20 working days for submittals for the Owner's Representative approval. The period of review for submittals with the Owner's Representative approval begins when the Owner receives the submittal from the QC organization. The period of review for each re-submittal is the same as for the initial submittal.

- D. Variations from contract requirements require the Owner's approval and will be considered where advantageous to the Owner. When proposing a variation, submit a written request to the Owner's Representative, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to the Owner. If lower cost is a benefit, also include an estimate of the cost saving. Identify the proposed variation separately and include the documentation for the proposed variation along with the required submittal for the item. When submitting a variation for approval, the Contractor warrants the following:

1. The Contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of the work.
2. In addition to the normal submittal review period, a period of 10 working days will be allowed for consideration by the Owner of submittals with variations.

E. Contractor's Responsibilities

1. Determine and verify field measurements, materials, field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and Contract documents.
2. Transmit submittals to the QC organization in orderly sequence to prevent delays in the work, delays to the Owner, or delays to separate contractors.
3. Advise the Owner's Representative of variation, as required by the paragraph entitled "Variations."
4. Correct and resubmit submittal as directed by the approving authority. When resubmitting disapproved transmittals or transmittals noted for resubmittal, the Contractor shall provide a copy of that previously submitted transmittal including all reviewer comments for use by the approving authority. Direct specific attention, in writing or on resubmitted submittal, to

revisions not requested by the approving authority on previous submissions.

5. Furnish additional copies of submittals when requested by the Owner's Representative, to a limit of 6 copies per submittal.
6. Complete work which must be accomplished as a basis of a submittal in time to allow the submittal to occur as scheduled.
7. Ensure no work has begun until submittals for that work have been returned as "approved," or "approved as noted ", except to the extent that a portion of the work must be accomplished as a basis of the submittal.

F. QC Organization Responsibilities

1. Note date on each submittal received from the contractor.
2. Review each submittal; and check and coordinate each submittal with the requirements of the work and Contract documents.
3. Review submittals for conformance with project design concepts and compliance with the Contract documents.
4. Act on submittals, determining the appropriate action based on the QC organization's review of the submittal.
 - a. When the QC Manager is the approving authority, take the appropriate action on the submittal from the possible actions defined in the paragraph entitled, "Actions Possible."
 - b. When the Owner's Representative is the approving authority or when a variation has been proposed, forward the submittal to the Owner with a certifying statement or return the submittal marked "not reviewed" or "revise and resubmit" as appropriate. The QC organization's review of the submittal determines the appropriate action.
5. Ensure that material is clearly legible.
6. Stamp each sheet of each submittal with the QC certifying statement or approving statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.
 - a. When the approving authority is the Owner's Representative, the QC organization will certify submittals forwarded to the Owner's Representative with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number [____], is in compliance with the Contract drawings and specification, can be installed in the allocated spaces, and is submitted for Owner approval.

Certified by Submittal Reviewer _____, Date _____
(Signature when applicable)
Certified by QC Manager _____, Date _____

(Signature)

- b. When the approving authority is the QC Manager, the QC manager will use the following approval statement when returning submittals to the Contractor as "Approved" or "Approved as Noted."

"I hereby certify that the (material) (equipment) (article) shown and marked in this submittal and proposed to be incorporated with Contract Number [____], is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is _____ approved for use.

Certified by Submittal Reviewer _____, Date _____

(Signature when applicable)

Approved by QC Manager _____, Date _____

(Signature)

7. Sign the certifying statement or approval statement. The person signing the certifying statements shall be the QC organization member designated in the approved QC plan. The signatures shall be in original ink. Stamped signatures are not acceptable.
8. Retain a copy of approved submittals at the project site, including the Contractor's copy of approved samples.

G. Owner's Responsibilities

When the approving authority is the Owner's Representative, the Owner will:

1. Note the date on which the submittal was received from the QC Manager, on each submittal for which the Owner's Representative is the approving authority.
2. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with the Contract documents.
3. Identify returned submittals with one of the actions defined in the paragraph entitled "Actions Possible" and with markings appropriate for the action indicated.

H. Actions Possible

Submittals will be returned with one of the following notations:

1. Submittals marked "not reviewed" will indicate the submittal has been previously reviewed and approved, is not required as a submittal, does not have evidence of being reviewed and approved by the Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Returned submittals deemed to lack review by the Contractor or to be incomplete shall be resubmitted with appropriate action, coordination, or change.
2. Submittals marked "approved" "approved as submitted" authorize the Contractor to proceed with the work covered.
3. Submittals marked "approved as noted" authorize the Contractor to proceed with the work as noted provided the Contractor takes no exception to the notations.

4. Submittals marked "revise and resubmit" or "disapproved" indicate the submittal is incomplete or does not comply with the design concept or the requirements of the Contract documents and shall be resubmitted with appropriate changes. No work shall proceed for this item until the re-submittal is approved.

1.03 FORMAT OF SUBMITTALS

A. Transmittal Form

Transmit each submittal, except sample installations and sample panels, to the office of the approving authority. Transmit submittals with a transmittal form prescribed by the Owner's Representative and the project standard. Transmittal form shall identify the Contractor, the date of submittal, and include information prescribed by the transmittal form and required in the paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations.

- B. Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on the transmittal form. Mark each copy of each submittal identically with the following:

1. Project title and location.
2. Construction Contract number.
3. Section number of the specification section by which the submittal is required.
4. When a resubmission, an alphabetic suffix on the transmittal number, for example, SD-10A, to indicate the resubmission.
5. The name, address, and telephone number of the subcontractor, supplier, manufacturer and any other second tier contractor associated with the submittal.

6. Product identification and location in project.

C. Format for Product Data

1. Present product data submittals for each section as a complete, bound volume. Include a table of contents listing page and catalog item numbers of product data.
2. Indicate, by prominent notation, each product that is being submitted; and indicate the specification section number and paragraph number to which it pertains.
3. Supplement product data with material prepared for the project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for the project.

D. Format for Shop Drawings

1. Shop drawings shall not be less than 8-1/2" by 11" nor more than 30" x 42".
2. Present 8-1/2" x 11" sized shop drawings as a part of the bound volume for the submittals required by the section. Present larger drawings in sets.
3. Include on each drawing the drawing title, number, date, and revision numbers and dates, in

addition to the information required in the paragraph entitled "Identifying Submittals."

4. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Identify materials and products for work shown.

E. Format of Samples

1. Furnish samples in the sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of a similar size as specified:
 - a. Sample of Equipment or Device: Full size.
 - b. Sample of Materials Less Than 2 by 3 inches: Built up to 8-1/2" by 11".
 - c. Sample of Materials Exceeding 8-1/2" by 11": Cut down to 8-1/2" by 11" and adequate to indicate color, texture, and material variations.
 - d. Sample of Linear Devices or Materials: 10" length or length to be supplied, if less than 10". Examples include conduit and handrails.
 - e. Sample of Non-Solid Materials: Pint. Examples include sand and paint.
 - f. Color Selection Samples: 2 inches by 4 inches.
 - g. Sample Panel: 4 feet by 4 feet.
 - h. Sample Installation: 100 square feet.
2. Samples Showing Range of Variation: Where variations are unavoidable due to the nature of the materials, submit sets of samples of not less than three units showing the extremes and middle of the range.
3. Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples shall be in undamaged condition at time of use.
4. Recording of Sample Installation: Note and preserve the notation of the area constituting the sample installation but remove the notation at the final clean up of the project.
5. When a color, texture or pattern is specified in naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

F. Format of Administrative Submittals

1. When a submittal includes a document to be used in the project or becomes a part of the project record, other than as a submittal, apply the Contractor's approval stamp to a separate sheet accompanying the document.
2. Operation and Maintenance Manual Data: Submit "Operation and Maintenance Data." Include components required in that section and the various technical sections.

1.04 QUANTITY OF SUBMITTALS

A. Number of Copies of Product Data

Submit 3 copies of product data requiring review and approval only by the QC organization and 4 copies of product data requiring review and approval by the Owner's Representative.

B. Number of Copies of Shop Drawings

Submit shop drawings in compliance with the quantity requirements specified for product data.

C. Number of Samples

1. Submit two samples, or two sets of samples showing range of variation, of each required item. One approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.
2. Submit one sample panel. Include components listed in technical section or as directed.
3. Submit one sample installation, where directed.
4. Submit one sample of non-solid materials.

D. Number of Copies of Administrative Submittals

1. Unless otherwise specified, submit the administrative submittals compliance with the quantity requirements specified for product data.

1.05 FORWARDING SUBMITTALS

A. Samples Required of the Contractor

1. Submit samples to the Engineer.

B. Shop Drawings, Product Data, and O&M Data

1. As soon as practicable after award of the contract, and before procurement or fabrication, submit, except as specified otherwise, to the Engineer, shop drawings and product data required in the technical sections of this specification. The Engineer for this project will review and provide surveillance for the Owner's Representative to determine if Contractor approved submittals comply with the contract requirements, and will review and approve for the Owner's Representative those submittals not permitted to be Contractor approved to determine if submittals comply with the contract requirements.

1.06 SUBMITTAL DESCRIPTIONS

A. Data

1. Submittals that provide calculations, descriptions, or other documentation regarding the work.

B. Manufacturer's Catalog Data

1. Data composed of catalog cuts, brochures, circulars, specifications and product data, and printed information in sufficient detail and scope to verify compliance with requirements of the contract documents. A type of product data.

C. Manufacturer's Standard Color Charts

1. Preprinted illustrations displaying choices of color and finish for a material or product. A type of product data.

D. Drawings

1. Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, detail of fabrications, layout of particular elements, connections, and other relational aspects of the work. A type of shop drawing.

E. Design Data

1. Design calculations, mix designs, analyses, or other data, written in nature and pertaining to a part of the work. A type of shop drawing.

F. Instructions

1. Preprinted material describing installation of a product, system, or material, including special notices and Material Safety Data Sheets, if any, concerning impedances, hazards, and safety precautions. A type of product data.

G. Schedules

1. A tabular list of data or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work. A type of shop drawing.

H. Statements

1. A document, required of the Contractor, or through the Contractor via a supplier, installer, manufacturer, or other lower tier contractor, the purpose of which is to further the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verification of quality. A type of shop drawing.

I. Reports

1. Reports of inspection and laboratory test, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

J. Test Reports

1. A report signed by an authorized official of an independent testing laboratory that a material, product, or system identical to the material, product or system to be provided has been tested in accordance with requirements specified by naming the test method and material. The test report must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test. Testing must have been within three years of the date of award of this Contract. A type of product data.

K. Factory Test Reports

1. A written report which includes the findings of a test required to be performed by the manufacturer on a prototype or on an actual portion of the work prepared for this project,

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before it is shipped to the job site. The report must be signed by an authorized official of the manufacturer's test facility or testing laboratory and must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test. A type of shop drawing.

L. Field Test Reports

1. A written report which includes the findings of a test made at the job site, in the vicinity of the job site, or on a sample taken from the job site, on a portion of the work, during or after installation. The report must be signed by an authorized official of a testing laboratory or agency and must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test. A type of shop drawing.

M. Certificates

1. Statements signed by responsible officials of a manufacturer of a product, system, or material attesting that the product, system, or material meet specified requirements. The statements must be dated after the award of this contract, name the project, and list the specific requirements which it is intended to address. A type of shop drawing.

N. Samples

1. Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work. A type of sample.

O. Sample Panels

1. An assembly constructed at the project site in a location acceptable to the Owner's Representative and using materials and methods to be employed in the work; completely finished; maintained during construction; and removed at the conclusion of the work or when authorized by the Owner's Representative. A type of sample.

P. Sample Installations

1. A portion of an assembly or material constructed where directed and, if approved, retained as a part of the work. A type of sample.

Q. Records

1. Documentation to ensure compliance with an administrative requirement or to establish an administrative mechanism. A type of administrative submittal.

PART II - PRODUCTS

Not used.

PART III - EXECUTION

A. Product data sheets to be submitted for review include but are not limited to:

1. Concrete mix.

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2. Hydraulic cement.
3. Epoxy Grout.
4. Fiberglass jackets and epoxy joint sealant.
5. Reinforcing bars.
6. Reinforcing mesh (welded wire fabric).
7. Silt boom.

B. Shop drawings to be submitted for review include but are not limited to:

1. Reinforcing steel including splice lengths.
2. Silt boom location.
3. Material laydown and fencing.
4. Barge placement and mooring.

END OF SECTION 01330

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SECTION 01450
QUALITY ASSURANCE
PART I - GENERAL

1.01 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A880 Criteria for Use in Evaluation of Testing Laboratories and Organization for Examination and Inspection of Steel, Stainless Steel, and Related Alloys

ASTM C1077 Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation

ASTM C31 Standard Method of Making and Curing Concrete Compressive and Flexural Test Specimens in the Field.

ASTM C39 Standard method of Test for Compressive Strength of Cylindrical Concrete Specimens.

ASTM C94 Standard Specification for Ready-Mix Concrete.

ASTM C138 Standard Method of Test for Unit Weight, Yield, and Air Content of Concrete.

ASTM C172 Standard Method of Sampling Fresh Concrete.

ASTM C192 Standard Method of Making and Curing Concrete Test Specimens in the Laboratory.

ASTM C214 Recommended Practice for Evaluation of Compression Test Results of Field Concrete.

ASTM D3740 (Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E329 Agencies Engaged in the Testing and/or Inspection of Materials Used on Construction

ASTM E543 Evaluating Agencies that Perform Nondestructive Testing

1.02 SUBMITTALS

Submit the following in accordance with Section 01330 entitled "Submittal Procedures."

A. Contractor Production Report.

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1.03 TESTING

Except as stated otherwise in the specification sections, perform sampling and testing required under this Contract.

- A. Provide an independent testing laboratory qualified to perform sampling and tests required by this Contract. When the proposed testing laboratory is not accredited by an acceptable "Qualified National Authority" listed in the paragraph entitled "Qualified National Authority," submit to the Contracting Officer for approval, certified statements, signed by an official of the testing laboratory attesting that the proposed laboratory, meets or conforms to the following requirements:
 - 1. Laboratories engaged in testing of construction materials shall meet the requirements of ASTM E329.
 - 2. Laboratories engaged in testing of concrete and concrete aggregates shall meet the requirements of ASTM C1077.
 - 3. Laboratories engaged in testing of soil and rock, as used in engineering design and construction, shall meet the requirements of ASTM D3740.
 - 4. Laboratories engaged in inspection and testing of steel, stainless steel, and related alloys will be evaluated according to ASTM A880.
 - 5. Laboratories engaged in nondestructive testing (NDT) shall meet the requirements of ASTM E543.
 - 6. Laboratories engaged in Hazardous Materials Testing shall meet the requirements of OSHA and EPA.
- B. Qualified National Authorities are the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology, the American Association of State Highway and Transportation Officials (AASHTO) program, and the American Association for Laboratory Accreditation (A2LA) program. Furnish to the Owner, a copy of the Certificate of Accreditation and Scope of Accreditation. The scope of the laboratory's accreditation shall include the test methods required by the Contract.
- C. Prior to approval of non-accredited laboratories, the proposed testing laboratory facilities and records may be subject to inspection by the Engineer. Records subject to inspection include equipment inventory, equipment calibration dates and procedures, library of test procedures, audit and inspection reports by agencies conducting laboratory evaluations and certifications, testing and management personnel qualifications, test report forms, and the internal QC procedures.
- D. The Owner retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract.
- E. Cite applicable Contract requirements, tests or analytical procedures used when reporting test results. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify Owner immediately. Conspicuously stamp the cover sheet for each report in large red letters

"CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results shall be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Owner. Furnish a summary report of field tests at the end of each month.

F. The Contractor shall furnish the signed reports, certifications, and a summary report of field tests at the end of each month to the Owner.

1.04 COMPLETION INSPECTIONS

A. Near the completion of all work or any increment thereof established by a completion time stated elsewhere in the specifications, the Contractor shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Include in the punch list any remaining items on the "Rework Items List" which were not corrected prior to the Punch-Out Inspection. The punch list shall include the estimated date by which the deficiencies will be corrected. A copy of the punch list shall be provided to the Owner. The Contractor or staff shall make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Owner that the facility is ready for the Owner "Pre-Final Inspection."

B. The Owner will perform a pre-final inspection to verify that the facility is complete and ready to be occupied. An Owner "Pre-Final Punch List" may be developed as a result of this inspection. The Contractor shall ensure that all items on this list are corrected prior to notifying the Owner that a "Final" inspection can be scheduled. Any items noted on the "Pre-Final" inspection shall be corrected in timely manner and shall be accomplished within the time slated for completion of the entire work, or any particular increment thereof if the project is divided into increments by separate completion dates.

C. The Contractor's Project Manager, the superintendent or other primary contractor management personnel, and the Owner's Representative will be in attendance at the Final Acceptance Inspection. Additional Owner personnel may be in attendance. The final acceptance inspection will be formally scheduled by the Engineer based upon results of the "Pre-Final" inspection. Notice shall be given to the Owner at least 14 days prior to the final inspection stating that all specific items previously identified to the Contractor as being unacceptable, along with all the remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.

1.05 DOCUMENTATION

A. Maintain current and complete records of on-site and off-site QC program operations and activities.

B. Contractor Production Reports are required for each day that work is performed. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Production Reports are to be prepared, signed and dated by the project superintendent and shall contain the following information:

1. Date of report, report number, name of contractor, Contract number, title and location of Contract and superintendent present.
2. Weather conditions in the morning and in the afternoon including maximum and minimum temperatures.

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3. Identify work performed by corresponding Scheduled Activity No., Modification No., etc.
4. A list of Contractor and subcontractor personnel on the work site, their trades, employer, work location, description of work performed, hours worked by trade, daily total work hours on work site, and total work hours from start of construction.
5. A list of job safety actions taken and safety inspections conducted. Indicate that safety requirements have been met including the results on the following:
 - a. Was a job safety meeting held? (If YES, attach a copy of the meeting minutes.)
 - b. Were there any lost time accidents? (If YES, attach a copy of the completed OSHA report.)
 - c. Was crane/trenching/scaffold/high voltage electrical/high work done? (If YES, attach a statement or checklist showing inspection performed.)
 - d. Was hazardous material/waste released into the environment? (If YES, attach a description of meetings held and accidents that happened.)
 - e. List safety actions taken today and safety inspections conducted.
6. A list of equipment/material received each day that is incorporated into the job.
7. A list of construction equipment on the work site including the number of hours used, idle and down for repair.
- 8 Include a "remarks" section in this report which will contain pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered and a record of visitors to the work site.

1.06 NOTIFICATION ON NON-COMPLIANCE

- A. The Owner will notify the Contractor of any detected non-compliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time for excess costs or damages by the Contractor.

PART II - PRODUCTS

Not used.

PART III - EXECUTION

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Not used.

END OF SECTION 01450

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SECTION 01525
SAFETY REQUIREMENTS
PART I - GENERAL

1.01 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.14 Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use

ANSI Z359.1 Safety Requirements for Personal Fall Arrest Systems

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.120 Hazardous Waste Operations and Emergency Response

29 CFR 1926.65 Hazardous Waste Operations and Emergency Response

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 Portable Fire Extinguishers

NFPA 70 National Electric Code

NFPA 241 Safeguarding Construction, Alteration, and Demolition Operations

1.02 DEFINITIONS

- A. Certified Industrial Hygienist: An individual who is certified by the American Board of Industrial Hygiene.
- B. Certified Safety Professional: A safety manager/specialist, or safety engineer that has passed the CSP exam administered by the Board of Certified Safety Professionals.
- C. Confined Space: A space which by design has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy, engulfment or any other recognized safety or health hazard. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.
- D. Multi-employer work site (MEWS): The prime contractor is the "controlling authority" for all work site safety and health of the subcontractors.
- E. Recordable Occupational Injuries or Illness: An occupational injury or illnesses that result in serious injuries, lost workday cases, non-fatal cases or significant mishaps.

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- F. Serious Injuries & Fatalities: Regardless of the time between the injury and death or the length of the illness; hospitalization of three or more employees; or property damage in excess of \$200,000.
- G. Lost Workday Cases: Injuries, other than fatalities, that result in lost workdays.
- H. Non-Fatal Cases: Cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve property damage in excess of \$10,000 but less than \$200,000 or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses that are reported to the employer but are not classified as fatalities or lost workday cases.
- I. Safety Officer: The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. The contractor quality control person cannot be the safety officer, even though the QC has safety inspection responsibilities as part of the QC duties.
- J. Significant Contractor Mishap: A contractor mishap which involves falls of 4 feet or more, electrical mishaps, confined space mishaps, diving mishaps, equipment mishaps, and fire mishaps which result in a lost time injury, or property damage of \$10,000 or more, but less than \$200,000; or when fire department or emergency medical treatment (EMT) assistance is required.
- K. Medical Treatment: Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment provided by a physician or registered personnel.
- L. First Aid: A one-time treatment, and follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, etc., which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.
- M. Lost Workdays: The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.

1.03 SUBMITTALS

- A. Submit site specific accident prevention plan for review and approval at least 15 calendar days prior to start of work at the job site. Conform to requirements of Federal, State and local safety and health laws and regulations. Work cannot proceed until the APP has been reviewed and found acceptable by the Owner or his designated representative. The APP shall be site specific and shall include:
 - 1. Name and safety related qualifications of the superintendent. Superintendent must demonstrate the ability to manage the on-site Contractor safety program through appropriate management controls and maintain a log of safety inspections performed. The superintendent must be able to identify hazards and shall have the direct responsibility for expending resources necessary to correct the hazards. The superintendent shall maintain applicable safety reference material on the job site.
 - 2. Emergency action plan to include a map denoting the route to the nearest emergency care

facility with emergency phone numbers that will be displayed in clear view for on-site employees.

3. Confined Space Entry Plan: Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

B. The APP shall include provisions to deal with hazardous materials as follows:

1. Inventory of hazardous materials to be introduced to the site with estimated quantities.
2. Plan for protecting personnel and property during the transport, storage and use of materials.
3. Emergency procedures for spill response and disposal, including a site map with approximate quantities on-site at any given time. The site map will be attached to the inventory, showing where the hazardous substances are stored.
4. Material Safety Data sheets for materials listed in inventory and not required in technical section of specification.
5. Approved labeling system to identify contents on all containers on-site.
6. Plan for communicating high health hazards to employees and adjacent occupants.

C. Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports".

1.04 QUALITY ASSURANCE

A. The safety officer shall attend the required pre-construction conference.

B. Hold safety meetings monthly. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the Contractor's daily report.

C. Alcohol and Drug Abuse Plan

1. Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."
2. Description of the on-site prevention program.

D. Fall Protection Plan: The plan shall be site specific and protect all workers at elevations above 6 feet.

E. Site Demolition Plan: The safety and health aspects prepared in accordance with Section 02220, "Demolition".

1.05 ACTIVITY HAZARD ANALYSIS (AHA)

Prepare for each phase of the work. As a minimum, define activity being performed, sequence of work,

specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include excavation safeguarding requirements. The appropriate AHA shall be reviewed and attendance documented by Contractor at the preparatory, initial, and follow-up phases of Quality Control inspection.

1.06 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees either use illegal drugs or consume alcohol during work hours. Ensure no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine or saliva specimens and test injured employee influence. A copy of the test shall be made available to the Owner upon request.

1.07 FALL HAZARD PREVENTION PROGRAM

- A. Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the fall protection plan and activity hazard analysis for the phase of work.
- B. Institute a fall protection program. As part of the Fall Protection Program, contractor shall provide training for each employee who might be exposed to fall hazards.

1.08 DUTIES OF THE SAFETY OFFICER

- A. Ensure construction hazards are identified and corrected.
- B. Maintain applicable safety reference material on the job site.
- C. Maintain a log of safety inspections performed.
- D. Attend the pre-construction.

1.09 DISPLAY OF SAFETY INFORMATION

Display the following information in clear view of all on-site construction personnel:

- A. Map denoting route to the nearest emergency care facility with emergency phone numbers.
- B. Activity hazard analysis (AHA).

1.10 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Owner has no responsibility to provide medical treatment.

1.11 REPORTS

- A. For OSHA recordable accidents, the prime contractor will conduct a suitable investigation, complete the Contractor Significant Incident Report and provide to the Owner within 5 calendar days of the accident.

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- B. Notify Owner, within 4 hours, of any accident meeting the definition of OSHA recordable occupational injury or illness. Information shall include Contractor name; contract title; type of contract; name of activity, installation or location where mishap occurred; date and time of mishap; names of personnel injured; extent of property damage, if any; and brief description of mishap (to include type of construction equipment used, PPE used, etc.) In addition to OSHA reporting requirements, initial notification shall be made of any accident involving significant mishaps.
- C. Monthly exposure reporting, to the Owner is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The prime Contractor shall identify, in the APP, who shall complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.
- D. Provide the Owner with a copy of each OSHA citation, OSHA report and Contractor response. Correct violations and citations promptly and provide written corrective actions to the Owner.

PART II - PRODUCTS

Not Used.

PART III - EXECUTION

3.01 CONSTRUCTION

- A. Comply with NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and fire and safety regulations.
- B. Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. Exceptions to the use of any of the above excluded materials may be considered by Owner upon written request by Contractor.
- C. The design should have identified materials such as PCB, lead paint, and friable and nonfriable asbestos. If material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Owner immediately. Within 14 calendar days the Contractor will determine if the material is hazardous. If material is not hazardous or poses no danger, the Owner will direct the Contractor to proceed. If material is hazardous and handling of the material is necessary to accomplish the work, the Contractor shall remove and legally dispose of the hazardous material at no additional cost to the Owner.

3.02 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the utilities being affected, location and duration of the outage, and any necessary sketches. Once approved and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting to review the scope of work and

the lock out/tag out procedures for worker protection.

3.03 SAFETY QUALIFICATIONS

A. Qualifications for on-site Superintendent, QC or Safety Representative:

1. Demonstrate ability to manage the on-site Contractor safety program through appropriate management controls, and maintain a log of safety inspections performed.
2. Able to identify hazards and have the direct responsibility for expending resources necessary to abate the hazards.
3. Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
4. Must submit training certifications showing the place and dates of any training.
5. Must attend the pre-construction conference with the Owner and Engineer.

B. Superintendent/QC, can and will be removed if at anytime the Owner or his/her designated representative finds them non-responsive or not enforcing safety issues at the contract work site. It is the responsibility of the Superintendent/QC to enforce safety issues at all times. If removed, all construction activities will be suspended until an acceptable replacement is approved by the Owner.

3.04 PERSONNEL PROTECTION

- A. Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of the duration of the exposure.
- B. Enforce use of the fall protection device named for each activity in the AHA all times when an employee is on a surface 6 feet or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.
- C. Personal fall arrest device equipment, subsystems, and components shall meet ANSI Z359.1, Personal Fall Arrest Systems. Only a full-body harness with a shock absorbing lanyard is an acceptable personal fall arrest device. Body belts may only be used as positioning devices only such as for steel reinforcing assembly. Body belts are not authorized as a personal fall arrest device. Harnesses must have upper middle back "D" rings for proper body suspension during a fall. Lanyard must be fitted with a double locking snap hook attachment. Webbing, straps, and ropes must be of synthetic fiber or wire rope.
- D. Safety nets shall be provided in unguarded workplaces over water, machinery, dangerous operations, or more than 25 feet above surface.
- E. Employees shall be provided with a safe means of access to the work area on a scaffold or work platform. Climbing of any braces or supports not specifically designed for access is prohibited. Contractor shall ensure that scaffold and work platform erection is performed by qualified employees. Do not use scaffold or work platform without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being

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greater in height than four times the dimension of the smallest width dimension for rolling scaffold.

Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. The first tie-in shall be at the height equal to 4 times the width of the scaffold base.

F. Use of Material Handling Equipment

1. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufactures printed operating instructions. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would result in a greater hazard to workers.

2. Cranes must be equipped with Load Indicating Devices, two anti-block devices, load, and boom angle moment indicating indicators.

G. The competent person for excavation shall be on site when work is being performed in excavation, and shall inspect excavations prior to entry by workers. Individual must evaluate all potential hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly.

H. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan work near energized components that minimizes worker exposure to all electrical hazards. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized sub-sites, only qualified electrical workers shall be permitted entry. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personnel protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

I. Contractor shall provide mechanical ventilation for all work performed in manholes, unless other hazards such as friable asbestos are present.

J. The Contractor Quality Control Manager shall conduct daily safety inspections as part of his/her quality control inspections and document the results on the Contractor's Daily Report.

3.05 ACCIDENT SCENE PRESERVATION

For serious accidents, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Owner.

3.06 FIRE PROTECTION

A. Prior to performing "Hot Work" (welding, burning, lead melting, blow torches, tar pots, etc.) or operating other flame-producing devices, the Contractor shall obtain approval from the Owner's on-site Representative.

1. All Hot Work will be shut down 30 minutes before the end of work and a fire watch shall be kept at the scene of operation during this 30 minutes.
- B. Melt kettles for tar, asphalt, creosote and similar materials shall not be closer than 25 feet to buildings or combustible materials. Provide a minimum of two 20 pound ABC all-purpose type extinguishers at melting kettle and area of hot material application. Equip kettles with heat controls and means of agitation to ensure controlled uniform temperatures throughout contents to prevent spot heating. Do not heat contents above flash point.
- C. The Contractor shall furnish, in accordance with all applicable requirements of the NFPA (National fire Protection association) Standards, sufficient fire extinguishers and fire watch personnel to protect the area in which his work is being performed. The size and type of fire extinguisher used will be subject to review by the Owner through the Engineer.
- D. The burning of trash or other waste material shall be prohibited.
- E. Heating
 1. All sources of temporary heat shall carry an "Underwriters Laboratory" label and portable heaters shall be located so as to avoid ignition of combustible materials.
 2. Electrical heaters shall not be connected to extension cords.
 3. Open "drum fires" are prohibited.
- F. Electrical
 1. All portable electric devices (saws, sanders, compressors, lights, extension cords) not required to be left on shall be disconnected at the close of work each day.
 2. All wires plugged into electrical outlets shall be equipped with male plugs. The inserting of the bare ends of wires into outlets is prohibited.
- G. Flammables
 1. Oil painting materials (paint, brushes, empty paint cans, rags, paint clothes, drop cloths, etc.) and flammable liquids shall be removed from enclosed areas at the close of work each day.
 2. Highly flammable liquids such as paints, thinner, etc. that are to be kept inside buildings shall be held to an absolute minimum except in buildings authorized and designed for such storage.
 3. Storage of gasoline in excess of five gallon containers shall be permitted only by specific approval from the Owner.
 4. All storage areas containing flammable liquids shall be marked with signs indicating "FLAMMABLES" and "NO SMOKING".
- H. Fire hose or extinguishers in existing buildings shall not be removed from their locations, unless specifically being relocated or removed per the plans and specification for the project. No fire hose or extinguishers shall be used for any purpose other than combating a fire.

- I. Smoking is strictly prohibited in or near areas where flammable liquids, highly combustible materials or explosives are stored, handled or processed. All existing smoking regulations in occupied areas shall be complied with. "NO SMOKING" signs shall be observed and restrictions complied with.
- J. Parking will only be allowed in areas designated for Contractor Personnel.
- K. All contractors providing office space or trailers with telephone service shall place or post the fire reporting phone number by the phone. All contractor personnel shall be instructed how to report a fire. Any fire, no matter how small, shall be reported.
- L. Prior to quitting time, a person, specifically designated by the Contractor, shall make a check of the job site and contract limits to ensure compliance with all safety conditions of this specification, insuring that the area is in a fire safe condition.

3.07 TEMPORARY WIRING

Provide temporary wiring as required in accordance with NFPA 70, NFPA 10, NFPA 241, and NFPA 70, Article 305-6(b), Assured Equipment Grounding Conductor Program. Program shall include frequent inspection of all equipment and apparatus.

3.08 SITE PROTECTION

- A. Contractor shall provide barricades around all work areas to prevent public access.
- B. Fencing shall be provided along the construction site at all open excavations to control access by unauthorized people. Fencing must be capable of restraining a force of at least 200 pounds against it.
- C. Place warning signs at the construction area perimeter designating the presence of construction hazards requiring unauthorized persons to keep out. Signs must be placed on all sides of the project, with at least on sign every 300 feet. All points of entry shall have signs designating the construction site as a hard hat area.

END OF SECTION 01525

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SECTION 01575
TEMPORARY ENVIRONMENTAL CONTROLS
PART I - GENERAL

1.01 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

- 29 CFR 1910 Occupational Safety and Health Standards
- 40 CFR 261 Identification and Listing of Hazardous Waste
- 40 CFR 262 Generators of Hazardous Waste
- 40 CFR 263 Transporters of Hazardous Waste
- 40 CFR 264 Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR 265 Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR 300 National Oil and Hazardous Substances Pollution Contingency Plan
- 49 CFR 171 General Information, Regulations, and Definitions
- 49 CFR 172 Hazardous Materials, Tables, and Hazardous Materials Communications Regulations
- 49 CFR 178 Shipping Container Specification

ENVIRONMENTAL PROTECTION AGENCY (EPA)

- EPA 832-R-92-005 Storm Water Management for Construction Activities

1.02 CONTRACTOR LIABILITIES FOR ENVIRONMENTAL PROTECTION

Contractors shall complete and provide environmental training documentation for training required by Federal, State, and local regulations.

1.03 DEFINITIONS

- A. Sediment

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Soil and other debris that has eroded and been transported by runoff water or wind.

B. Solid Waste

Rubbish, debris, garbage, and other discarded solid materials, except hazardous waste as defined in paragraph entitled "Hazardous Waste," resulting from industrial, commercial, and agricultural operations and from community activities.

C. Sanitary Wastes

Wastes characterized as domestic sanitary sewage.

D. Rubbish

Combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans, and bones.

E. Debris

Combustible and noncombustible wastes such as ashes and waste materials resulting from construction or maintenance and repair work, leaves, and tree trimmings.

F. Chemical Wastes

This includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.

G. Garbage

Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

H. Hazardous Waste

Hazardous substances as defined in 40 CFR 261 or as defined by applicable State and local regulations.

I. Hazardous Materials

Hazardous materials as defined in 49 CFR 171 and listed in 49 CFR 172.

J. Landscape Features

Trees, plants, shrubs, and ground cover.

K. Oily Waste

Petroleum products and bituminous materials.

1.04 SUBMITTALS

Submit the following in accordance with Section entitled "Submittal Procedures."

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- A. Pre-construction survey report.
- B. Submit a copy of an approved laboratory analysis of materials collected as a result from abrasive blasting operations before disposing of waste materials.
- C. Submit copies of any State and local permits or licenses for the solid waste disposal facility.
- D. Submit a copy of the applicable EPA and State permits, manifests, or licenses for transportation, treatment, storage, and disposal of hazardous waste by permitted facilities.
- E. Submit one copy of the EPA or State permit license, or regulation for the transporter who will ship the hazardous waste to the permitted Treatment, Storage, and Disposal (TSD) facility.
- F. Submit written certification that hazardous waste turned in for disposal was generated on the Owner's property and is identified, packaged, and labeled in accordance with 40 CFR 261, 40 CFR 262, and 40 CFR 263.

1.05 ENVIRONMENTAL PROTECTION REGULATORY REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined in this Section. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with Federal, State, and local regulations pertaining to the environment, including but not limited to water, air, solid waste, and noise pollution.

1.06 ENVIRONMENTAL PROTECTION PLAN

A. Contents of Environmental Protection Plan

- 1. Include any hazardous materials (HM) planned for use on the job. Submit a list (including quantities) of HM to be brought to the site and copies of the corresponding material safety data sheets (MSDS). Submit this list to the Owner. At project completion, remove any hazardous material brought onto the site. Account for the quantity of HM brought to the site, the quantity used or expended during the job, and the left over quantity which (1) may have additional useful life as a HM and shall be removed by the Contractor, or (2) may be a hazardous waste, which shall then be removed as specified herein.
- 2. The Environmental Protection Plan shall list and quantify any Hazardous Waste (HW) to be generated during the project.
- 3. Store HW near the point of generation up to a total quantity of 55 gallons of hazardous waste. Move any volume exceeding these quantities to a HW permitted area within 3 days. Properly label all hazardous waste to be stored in accordance with applicable regulations.
- 4. Contact Owner for conditions in the area of the project which may be subject to special environmental procedures. Include this information in the Pre-construction Survey. Describe in the Environmental Protection Plan any permits required prior to working the area, and contingency plans in case an unexpected environmental condition is discovered.
- 5. Obtain permits for handling HW, and deliver completed documents to Engineer for review. File the documents with the appropriate agency, and complete disposal with the approval

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of Owner. Deliver correspondence with the State concerning the environmental permits and completed permits to Owner.

B. Environmental Protection Plan Format

The Environmental Protection Plan shall conform to the following format:

ENVIRONMENTAL PROTECTION PLAN

Contractor Organization

Address and Phone Numbers

1. Methods to be used to prevent soil erosion
2. Methods to be used to contain spills of oily waste or debris
3. Methods to be used to control dust
4. Methods to be used for solid waste disposal
5. Hazardous materials to be brought onto the site
6. MSDS package
7. Employee training documentation
8. HW storage plan
9. HW to be generated
10. Pre-construction survey results
11. Permitting requirements identified

C. Perform a pre-construction survey of the project site with the Engineer, and document existing environmental conditions in and adjacent to the site.

PART II - PRODUCTS

Not used.

PART III - EXECUTION

3.01 PROTECTION OF NATURAL RESOURCES

Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work. Confine construction activities to within the limits of the work indicated or specified. Conform to the national and state permitting requirements of the Clean Water Act.

- A. Prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water. Surround all temporary fuel oil or petroleum storage tanks with a temporary earth berm of sufficient size and strength to contain the contents of the tanks in the event of leakage or spillage.
- B. Prevent oily substances or other debris from entering the water. Provide a temporary protective floating boom system, complete with associated hardware and anchors, to prevent debris from escaping from the work area. The boom shall totally enclose any active work or storage area. Booms shall have a minimum of 6 inches of freeboard, 12 inches draft, 11 pounds per foot buoyancy and a fabric strength of 13,000 pounds.

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- C. Do not disturb fish and wildlife. Do not alter water flows or otherwise significantly disturb the native habitat adjacent to the project and critical to the survival of fish and wildlife, except as indicated or specified.

3.02 NOISE

Make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives will not be permitted without written permission from the Owner, and then only during designated times. Confine pile-driving operations to the period between 7 a.m. and 4 p.m., Monday through Friday, exclusive of holidays, unless otherwise directed.

3.03 EROSION AND SEDIMENT CONTROL MEASURES

- A. Burn-off of the ground cover is not permitted.

- B. Temporary Protection of Erodible Soils

Use the following methods to prevent erosion and control sedimentation:

1. Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, berms, and use of silt fences and straw bales to retard and divert runoff to protected drainage courses.
2. Provide temporary protection on sides and back slopes as soon as rough grading is completed or sufficient soil is exposed to require erosion protection. Protect slopes by accelerated growth of temporary vegetation, mulching, netting or other methods approved by the Engineer.

3.04 CONTROL AND DISPOSAL OF SOLID WASTES

- A. Pick up solid wastes on a daily basis, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Dispose of solid waste generated at locations as directed.
- B. Remove rubbish and debris from Owner property and dispose at a licensed disposal facility off-site.
- C. Place garbage in approved containers, and move to a pickup point or disposal area, where directed.

3.05 CONTROL AND DISPOSAL OF HAZARDOUS WASTE

- A. Handle generated hazardous waste in accordance with 40 CFR 262.
- B. Dispose of hazardous waste in accordance with Federal, State, and local regulations, especially 40 CFR 263, 40 CFR 264, and 40 CFR 265. Removal of hazardous waste from project site shall not occur without prior notification and coordination with the Owner. Transport hazardous waste by a permitted, licensed, or registered hazardous waste transporter to a TSD facility. Hazardous waste shall be properly identified, packaged, and labeled in accordance with 49 CFR 172. Provide completed manifest for hazardous waste disposed of off-site to the Engineer within

7 days of disposal. Hazardous waste shall not be brought onto the site.

- C. Store hazardous waste in containers in accordance with 49 CFR 178. Identify hazardous waste in accordance with 40 CFR 261 and 40 CFR 262. Identify hazardous waste generated within the confines of the site by the site's EPA generator identification number.
- D. Take precautions to prevent spills of oil and hazardous material. In the event of a spill, immediately notify the Owner. Spill response shall be in accordance with 40 CFR 300 and applicable State regulations.
- E. Protect against spills and evaporation during fueling and lubrication of equipment and motor vehicles. Dispose of lubricants and excess oil in accordance with Federal, State, local regulations per 3.05B.

3.06 DUST CONTROL

- A. Keep dust down at all times, including nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning non-particulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not shake bags of cement, concrete mortar, or plaster unnecessarily.
- B. Abrasive Blasting
 - 1. The use of silica sand is prohibited in abrasive blasting.
 - 2. Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other. Perform work involving removal of hazardous material in accordance with 29 CFR 1910.
 - 3. Collect dust, abrasive, paint, and other debris resulting from abrasive blasting operations on painted surfaces and store in 55 gallon drums with watertight lids. Take a representative sample of this material, and test for EP toxicity with respect to lead, chromium, and cadmium content. The sampling and testing shall be performed in accordance with 40 CFR 261. Handle debris resulting from the abrasive blasting operations as a hazardous material, and dispose of in accordance with 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Transport hazardous material by a transporter licensed and permitted for transportation of hazardous materials. Dispose of hazardous material in an EPA-approved and permitted facility specifically designated for hazardous waste disposal.

END OF SECTION 01575

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SECTION 01700
EXECUTION REQUIREMENTS
PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work specified in this section.

1.02 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
1. Construction Layout.
 2. Field engineering and surveying.
 3. General installation of products.
 4. Progress cleaning.
 5. Starting and adjusting.
 6. Protection of installed construction.
 7. Correction of the Work.
- B. Related Sections include the following:
1. Division 1, Section “Project Management and Coordination” for procedures to coordinate field engineering with other construction activities.
 2. Division 1, Section “Submittal Procedures” for submitting surveys.
 3. Division 1, Section “Closeout Procedures” for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.03 SUBMITTALS

- A. Qualification Data: For land surveyor to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Certificates: Submit certificate signed by land surveyor certifying that locations and elevation of improvements comply with requirements.
- C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- D. Certified Surveys: Submit 5 copies signed by land surveyor.
- E. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.04 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART II – PRODUCTS

Not Used.

PART III – EXECUTION

3.01 IDENTIFICATION

- A. The Contractor will identify existing control points and property line corner stakes.
- B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks, before proceeding to lay out the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points or requirements to relocate reference points due to necessary changes in grades or locations.
 2. Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.
- C. Establish and maintain a minimum of 2 permanent benchmarks on the site; referenced to data established by survey control points.
- D. Establish and maintain the Layout Baseline with the stationing indicated on the Contract Drawings.

3.02 EXAMINATION

- A. Existing Conditions: The existence and location of previously installed site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of all site utility systems and other construction affecting the Work.
1. Before construction, verify the location and connection points of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of all underground utilities and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at connection points of sanitary sewer, storm sewer, gas, telecom, water-service piping, irrigation, and underground electrical services.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

3.03 PREPARATION

- A. Existing Utility Information: Furnish information to Owner's Representative that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities services serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 1. Notify the Owner's Representative not less than 2 days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Owner's Representative's written permission.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to the Owner's Representative. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation" or similar form.

3.04 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Contract Documents in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Owner's Representative immediately.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.

2. Establish dimensions with tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.

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4. Check the location, level and plumb, of every major element as the Work progresses.
 5. Notify Owner's Representative when deviations from required lines and levels exceed allowable tolerances.
 6. Close site surveys with an error of closure less than or equal to the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level structures from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by the Engineer.

3.05 FIELD ENGINEERING

- A. Identification: Contractor will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of the Owner's Representative. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to the Owner's Representative before proceeding.
 2. Replace lost or destroyed permanent benchmarks or control points promptly. Base replacements on the original survey control points.
 3. Any required re-calculation and layout plan for an offset baseline shall be provided by the Contractor at no additional cost to the Owner.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

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- D. Certified Survey: On completion of substructures, major site improvements, site clearance including debris and/or obstruction removal, controlled fill and horticultural and other work requiring field engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- E. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official “property survey”.

3.06 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- B. Comply with manufacturer’s written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by the Owner’s Representative.
 - 2. Allow for structure movement, including thermal expansion and contraction.

G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

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3.07 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements of NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80°F (27°C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris and ensure that no materials enter the adjacent waterway.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed areas.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
 - 1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage, adverse weather conditions or deterioration at Substantial Completion.

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- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.08 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1, Section "Quality Control".

3.09 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove, and replace defective construction. Restore damaged substrates and finishes. Comply with requirements of original construction or installation of Work.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken materials.

END OF SECTION 01700

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SECTION 01710
CLEANING
PART I - GENERAL

1.01 DESCRIPTION

- A. Throughout the construction period, maintain the worksites in a standard of cleanliness as described in this Section.
- B. In addition to standards described in this Section, comply with all requirements for cleaning as described in various other Sections of these Specifications.
- C. Maintain premises and public properties free from accumulations of waste, debris, and rubbish caused by operations.
- D. At completion of Work, remove and lawfully dispose of waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

1.02 QUALITY ASSURANCE

- A. Conduct daily inspections, and more often if necessary, to verify that requirements of cleanliness are being met.
- B. In addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

1.03 SAFETY REQUIREMENTS

- A. Hazards Control
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes that create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- B. Conduct cleaning and disposal operations to comply with all applicable ordinances and anti-pollution laws.

PART II - PRODUCTS

- A. Provide all required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

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PART III - EXECUTION

3.01 PROGRESS CLEANING

A. General

1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
3. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
4. At least once a week and more often if necessary, completely remove all scrap, debris and waste material from the job site.
5. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.
6. Combustible waste, scrap, rubbish, etc., shall be stored in adequately sized metal containers (with metal covers) where practical, pending removal from the premises.

B. Worksites

1. Daily, and more often if necessary, inspect each site and move all scrap, debris and waste material to a place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on each site; restack, tidy, or otherwise service all arrangements to meet the above requirements.
3. Maintain each site in a neat and orderly condition at all times.

C. Structures

1. Weekly, and more often if necessary, inspect the new structures and move all scrap, debris, and waste material to designated storage area.
2. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of materials required to achieve the required cleanliness.
3. Handle materials in a controlled manner. Do not drop or throw materials from heights.
4. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly finished surfaces.

3.02 FINAL CLEANING

- A. Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste.

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B. Employ experienced workmen, or professional cleaners, for final cleaning.

C. In preparation for substantial completion or occupancy, conduct a final inspection of sight-exposed exterior surfaces, and of any concealed spaces.

D. Structures

1. Visually inspect all surfaces and remove all traces of soil, waste material, smudges and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains, and dirt from finished surfaces. Use only the specified cleaning materials and equipment.
2. Besides the general broom cleaning, the Contractor shall do the following special cleaning for all trades at the completion of the work and before final acceptance:
 - a. Remove all marks, stains, and other soil or dirt from all newly finished surfaces.
 - b. Remove all stains and clean exposed concrete floors.
 - c. Clean and polish all hardware for all trades; this shall include removal of all stains, dust, dirt, paint, etc., upon completion.
 - d. Clean all new fixtures and equipment installed as part of this Contract, removing all stains, paint, dirt and dust.
 - e. Repair and patch marred surfaces to specified finish to match adjacent surfaces.

E. Final Cleaning: Schedule final cleaning as approved by the Engineer to enable the Owner to accept a completely clean project.

PART IV - METHOD OF MEASUREMENT

No Method of Measurement is required for this Section.

PART V - BASIS OF PAYMENT

There shall be no separate payment for this Section.

END OF SECTION 01710

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SECTION 01770
CLOSEOUT PROCEDURES
PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work specified in this section.

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Project Record Documents.
3. Operation and Maintenance manuals.
4. Warranties.
5. Instruction of Owner's personnel.
6. Final cleaning.

B. Related Sections include the following:

1. Division 1, Section "Construction Progress Documentation" for submitting final documentation.
2. Division 1, Section "Execution Requirements" for progress cleaning of Project site.
3. Divisions 2 through 16, Sections for specific closeout and special cleaning requirements for products of those Sections.

1.03 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspections for determining date of Substantial Completion, complete the following (List items below that are incomplete in request):

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to the services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

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7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 8. Complete startup testing of systems.
 9. Submit test/adjust/balance records.
 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 11. Advise Owner of changeover in all utilities.
 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 13. Complete final cleaning requirements, including touchup painting.
 14. Touchup and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer and/or Owner's Representative will either proceed with inspection or notify Contractor of unfilled requirements. The Owner's Representative will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by the Owner's Representative that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.04 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to payment procedure.
 2. Submit certified copy of Owner's Representative's endorsed and dated Substantial Completion inspection list of items to be completed or corrected (punch list). The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

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- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer and/or Owner's Representative will either proceed with inspection or notify Contractor of unfilled requirements. The Owner's Representative will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.05 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three (3) copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.

1. Organize list of areas in phases to match construction schedule, starting with the northern areas first and proceeding south.
2. Organize items applying to each phase of work by major element, including categories for earthwork, utility systems, paving, structures, irrigation, water supply, lighting, planting soils and mixes, and site furnishings.

3. Include the following information at the top of each page:

- a. Project Name.
- b. Date.
- c. Name of Engineer and Owner's Representative.
- d. Name of Contractor.
- e. Page number.

1.06 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Owner's Representative for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" x 11" paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

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3. Identify each binder on the front and spine with the typed or printed title “WARRANTIES”, Project name, and name of Contractor.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART II – PRODUCTS

2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART III – EXECUTION

3.01 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances, and Federal and local environmental and anti-pollution regulations.

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial cleaning and maintenance program. Comply with manufacturer’s written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access along walkways.
 - f. Clean exposed hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces.
 - g. Remove debris from limited access spaces, including trenches, equipment vaults, manholes, and similar spaces.
 - h. Remove labels that are not permanent.
 - i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
1. Do not paint over “UL” and similar labels, including mechanical and electrical nameplates.

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- j. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - k. Replace parts subject to unusual operating conditions.
 - l. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective fixtures.
 - m. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems or waterways. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770

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SECTION 02100
SITE WORK GENERAL PROVISIONS
PART I - GENERAL

1.01 SUMMARY OF WORK

- A. Under the applicable Division-2 sections referred to herein, the Contractor shall provide all labor, materials and equipment necessary to perform all site work that is indicated or covered by the Contract Documents.
- B. Site work shall be shown on the site improvement plans, or as specified herein, or as directed by the Owner's Representative. Work shall include, but not be limited to, the following:
 - 1. Earthwork
 - 2. Shoring and Bracing Earthwork
 - 3. Trench, Culverts, and Structure Excavation
 - 4. Temporary Environmental Controls
- C. The drawings and general conditions of the contract, including General and Supplementary Conditions, apply to work specified in the Division-2 sections indicated herein. The site improvement plans consisting of the following shall be referred to herein as the Site Plan.
 - 1. Site Plan and Sections
- D. Site work shall be accomplished in accordance with the requirements and regulations of the City of New York.
- E. The Contractor shall provide continuous access to the site and shall coordinate work with all other contractors and subcontractors working on the site, adjacent roadway systems, or adjacent properties. The Contractor shall not obstruct access to and from the adjacent properties from the adjacent roadways and driveways.
- F. The Contractor shall provide a safe construction site at all times, and the public shall be protected from unreasonable hazard. Applicable local and/or State requirements shall be observed and necessary permits acquired by the Contractor. The Contractor shall take immediate steps to rectify any hazardous or unsafe condition determined so by the Consultant or the municipal agency having jurisdiction. The Contractor shall conform to the requirements of the municipal agency having jurisdiction; and Industrial Code Rule 23, Protection in Construction, Demolition and Excavation, Operations, of the Rules and Regulations of the State of New York and of Subsection 107-05 "Safety and Health Requirements" of the NYSDOT Standard Specifications.
- G. Throughout the specifications contained herein, reference is made to the requirements of the City of New York and the requirements of the utility having jurisdiction (water, sewer, electric, gas and telephone). When there is a conflict between the referenced specifications, requirements, details, and specifications contained herein, the more stringent requirements shall control, as determined by the Consultant or representative of agency having jurisdiction, as appropriate, shall be final.

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- H. The Contractor shall obtain and observe the applicable sections of the following specifications, details and requirements herein referenced. In utilizing referenced Standard Details and Specifications, the Contractor shall conform to requirements governing the work, materials, or project and not the general provisions and other provisions relating to measurement and payment. Standard Specifications, Details, Codes, Requirements, etc., specified herein by reference shall be as binding as if copied verbatim and specified directly herein.
1. The specifications, details and requirements of the City of New York.
 2. "Standard Specifications Construction and Materials, and Details", of the New York State Department of Transportation.
 3. Title 29 Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction, (OSHA).
 4. Industrial Code Rules of the New York State Department of Labor, Board of Standards and Appeals.
- I. Minimum Standard Reminder: Codes and Standard Specifications listed are minimum standards, and will not relieve the Contractor from carrying out all site work operations in a safe and prudent manner, or from providing a higher quality of material and workmanship. Workmen, the public, and adjacent property shall be protected from unreasonable hazard, and, the work shall be satisfactorily completed without causing damage to adjacent ground and structures.
- J. Conformance to the requirements herein does not relieve the Contractor from implementing additional measures or providing additional materials, work, equipment, personnel, etc., necessary to ensure a safe construction site and protection of existing facilities. The Contractor is placed on notice that safety during construction is considered as important as the construction itself. The Contractor shall, therefore, at all times conduct his operations in a manner to ensure that conditions on the site are adequate and effective for safety; and, to insure the convenience of abutting property, Owners and their safety as well as the safety of his own employees.
- K. Emergency Contact Person: The Contractor shall designate someone to be available to respond to emergency calls. The name of the person and the telephone number at which he/she can be reached at any time shall be given to the Consultant, Owner and all police agencies in the area. Such person shall have full authority and capability to mobilize forces promptly as required to respond to an emergency and protect the public.

1.02 PERMITS AND BONDS

- A. Permits and Bonds: Purchase and submit copies of permits and bonds necessary in connection with the performance of the work specified in this section. At the job site, post notices and copies of permits necessary for the proper and lawful performance of the work, in accordance with such permits.

END OF SECTION 02100

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SECTION 02220
DEMOLITION
PART I - GENERAL

1.01 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.6 Demolition Operations

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.101 National Emission Standard for Asbestos

29 CFR 1910.101 National Emission Standard for Asbestos

1.02 GENERAL REQUIREMENTS

Do not begin demolition until authorization is received from the Owner. Remove rubbish and debris from the project site daily; do not allow accumulations on the pier. Store materials that cannot be removed daily in areas specified by the Owner.

1.03 SUBMITTALS

Submit the following in accordance with Section 01330 entitled "Submittal Procedures."

- A. Submit proposed demolition and removal procedures [to the Owner] for approval before work is started.
- B. Required data for Demolition plan shall include procedures for coordination with other work in progress, a detailed description of methods and equipment to be used for each operation and of the sequence of operations
- C. Submit receipts for all demolition materials required to be disposed off-site, whether hazardous or non-hazardous waste, to ensure that the material was properly disposed of in accordance with all applicable rules and regulations. See Section 01575 of this Specification for additional requirements.

1.04 WORK INCLUDED

- A. Removal of all unattached material and debris from the surface of the Piers, Platforms, Bulkheads and Seawalls to be repaired or replaced.
- B. Demolition of existing Structures per Contract Drawings: All pavement, structures, fill, timber sheeting and other structural members shall be removed and disposed off-site. Timber piles shall be cut off at the mudline, or pulled out if they interfere with work operations, and legally disposed off-site. Fill material and debris within the project site shall be removed to a depth three

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feet below Mean Low Water.

1.05 REGULATORY AND SAFETY REQUIREMENTS

Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," safety requirements shall conform with ANSI A10.6.

1.06 NOTIFICATIONS

Furnish timely notification of demolition projects to Federal, State, regional, and local authorities in accordance with applicable regulations. Notify the local air pollution control district/agency and the Owner in writing 10 days prior to the commencement of work in accordance with 40 CFR 61-SUBPART M.

1.07 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Sweep pavements as often as necessary to control the spread of debris.

1.08 PROTECTION

- A. Where pedestrian and driver safety is endangered in the area of removal work or storage, use traffic barricades with flashing lights and warning signs, as appropriate. Notify the Owner prior to beginning such work.
- B. Protect existing work that is to remain in place, be reused, or remain the property of the Owner. Repair items that are to remain and which are damaged during performance of the work to their original condition, or replace with new. Do not overload structural elements or pavements to remain. Provide new supports and reinforcement for existing construction weakened by demolition or removal work. Repairs, reinforcement, or structural replacement must have Owner approval.
- C. Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities.
- D. Burning will not be permitted.

1.09 RELOCATIONS

Perform the removal and reinstallation of relocated items as indicated with workmen skilled in the trades involved. Repair items to be relocated which are damaged or replace damaged items with new undamaged items as approved by the Owner.

PART II – PRODUCTS

Not used.

PART III - EXECUTION

3.01 EXISTING FACILITIES TO BE REMOVED

A. Demolition for this project includes two distinct types:

1. Demolition, removal, and disposal of unattached and unsound concrete from existing platform and pier structures.
2. Demolition, removal, and disposal of adjacent structures that are necessary for the repair and/or construction of the new seawall, platform and pier structures.

B. Remove and dispose of existing portions of the platform and pier structures as necessary to perform esplanade repairs. This includes, but is not limited to concrete bulkheads, seawalls and retaining structures, timber deck framing and planking, concrete deck, and stone fill.

C. Demolish, remove, and dispose of derelict portions of the platform and pier structures.

D. Remove and dispose of timber piles by:

1. Cutting off timber piles at the mudline that interferes with the esplanade repairs.

E. Demolish, remove, and dispose of adjacent structures or materials that are necessary for the repair and/or construction of the new seawall, platform, and pier structures. This includes concrete bulkhead walls, timber bulkhead walls, and steel sheet piles. This also may involve excavation of reinforced concrete debris used as fill.

F. Remove existing utilities uncovered by work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Owner. Remove meters and related equipment and deliver to a location in accordance with instructions of the Owner. If utility lines are encountered that are not shown on drawings, contact the Owner for further instructions.

G. Remove concrete and asphalt concrete paving and slabs, including aggregate base as indicated on the Contract Drawings. Provide neat saw-cuts at limits of pavement removal as indicated.

H. Saw-cut and remove masonry so as to prevent damage to surfaces to remain and to facilitate the installation of new work. Where new masonry adjoins existing, the new work shall abut or tie into the existing construction as specified for the new work.

I. Saw concrete along straight lines to a depth of not less than 2 inches. Break out the remainder of the concrete provided the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw-cut entirely through the concrete.

J. Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work. Finished surfaces of patched area shall be flush with the adjacent existing surface and shall match the existing adjacent surface as closely as possible as to texture and finish. Patching shall be as specified and indicated, and shall include:

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1. Holes and depressions caused by previous physical damage or left as a result of removals in existing masonry walls to remain shall be completely filled with an approved masonry patching material, applied in accordance with the manufacturer's printed instructions.

3.02 FILLING

Caution must be taken to prevent uncovered holes and other such hazards. Fill holes, and other hazardous openings in accordance with the instructions of the Owner's Representative.

3.03 DISPOSITION OF MATERIAL

- A. Except where specified in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from Owner's property. Title to materials resulting from demolition, and materials and equipment to be removed, is vested in the Contractor upon approval by the Owner of the Contractor's demolition and removal procedures, and authorization by the Owner to begin demolition. The Owner will not be responsible for the condition or loss of, or damage to, such property after contract award. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.
- B. Remove and store materials and equipment indicated to be reused or relocated to prevent damage, and reinstall as the work progresses.
- C. Remove materials and equipment that are indicated to be removed by the Contractor and that are to remain the property of the Owner, and deliver to a storage site as directed within two miles of the work.
- D. Remove and transport debris and rubbish in a manner that will prevent spillage on pavements, streets or adjacent areas. Clean up spillage from pavements, streets and adjacent areas that may occur.

END OF SECTION 02220

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SECTION 02880
MARINE CONSTRUCTION
PART I - GENERAL

1.01 DESCRIPTION

- A. This work is subject to the general conditions of the contract as specified previously.
- B. Furnish labor, materials and equipment for the removal of debris and loose and unsound concrete at the deteriorated piles, and repair piers and seawalls as shown on the Contract Drawings.

1.02 PERMITS

- A. No work shall commence without approvals required by the City of New York, State of New York, U. S. Army Corps of Engineers and all other applicable agencies having jurisdiction within the project site.
- B. Contractor shall obtain all required permits from the Department of Environmental Conservation, U. S. Army Corps of Engineers and all other applicable agencies having jurisdiction within the project site at no additional cost to the Owner.

1.03 RELATIONS WITH OTHER TRADES

- A. Work shall be coordinated with any utility installation and site work so that trades do not interfere.

1.04 SUBMITTALS

- A. Contractor shall submit the following to the Engineer before commencing work:
 - 1. Certification of treatment for lumber.

PART II - PRODUCTS

2.01 TREATED LUMBER

- A. All marine construction shall be of new, straight Douglas Fir or Southern Pine, Sawn Lumber No. 2 or better, treated as follows:
 - 1. Beams, stringers, and bracing - Creosote - Retention 15 PCF minimum penetration and application in accordance with AWPB Standard MLP-80.
 - 2. Decking shall be pressure treated with pentachlorophenol to retention of 0.50 PCF in accordance with AWPB Standard LP 33 or Chromated Copper Arsenate treatment with retention of 0.40 PCF in accordance with AWPB Standard LP-22. Chromated Copper Arsenate treated lumber shall be kiln dried after treatment. The "Dry" stamping shall be visible on lumber, representing maximum moisture content of 19%.

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B. All treated lumber shall bear the appropriate marking of the American Wood Preservers Bureau.

2.02 HARDWARE

A. Hardware for Marine Construction shall be hot-dip galvanized.

B. All structural connections that are bolted, shall have a $\frac{3}{4}$ " minimum bolt diameter (unless otherwise noted).

C. Round galvanized washers shall be placed at both sides of connected material, minimum washer size:

1" Bolt - 3-1/4" Washer; 0.25" thick

7/8" Bolt - 3" Washer; 0.25" thick

3/4" Bolt - 2-1/2" Washer; 0.25" thick

5/8" Bolt - 2" Washer; 0.25" thick

PART III - EXECUTION

3.01 FABRICATION AND ERECTION

A. Holes drilled for bolts shall be 1/16" smaller than bolt diameter.

B. All timber pile connections shall be cut only as deep as necessary to provide flush bearing of washers.

C. All piles projecting above deck level shall be protected from public by fastening of wood battens, as shown on drawings.

END OF SECTION 02880

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SECTION 03310
CONCRETE PILE JACKETING AND GROUTING
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

All provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

1.02 SUMMARY

A. The work covered by this section consists of furnishing all supervision, labor, materials, testing and equipment necessary to install a pile jacketing and grouting system to repair and/or protect concrete piles as hereinafter specified and detailed on the Contract Drawings.

1. Install a permanent outer jacket of durable, inert and corrosion-free material, and fill the annular space between the pile and the permanent jacket with a hydro-ester pourable epoxy grout.

B. Location and quantity of piles to be repaired and/or protected shall be as specified on the Contract Drawings.

C. Related Sections include the following:

1. Division 1 – Section “Submittal Procedures” for procedures and other submittal criteria.

1.03 QUALITY ASSURANCE

A. General:

1. Insofar as possible, all materials and equipment used in the installation of this work shall be of the same brand or manufacturer throughout for each class of material and/or equipment.
2. Use numbers of skilled workers equal to work requirement or occasion. The skilled workers shall be thoroughly trained and experienced in the necessary crafts and shall be completely familiar with the specified requirements and methods needed for proper performance of the Work in this Section.

B. Manufacturer’s Qualifications: Firms regularly engaged in the manufacture of pile protection systems of the type, material, and sizes required, whose products have been in satisfactory use in similar service for not less than seven years.

C. Installer’s Qualifications: A firm with at least five years of successful installation experience on projects with work of installing pile protection systems similar to that required for this Work.

- D. The Contractor shall establish, to the satisfaction of the Engineer, that the planning for grouting and the actual placement of the mixed epoxy grout system is performed by experienced personnel.

1.04 SUBMITTALS

- A. Refer to and comply with Division 1 – Section “Submittal Procedures”, for procedures and other submittal criteria.

- B. Product Data:

1. Prior to the start of any work, the Contractor shall submit to the Engineer for approval a list of all materials and equipment specified or otherwise required to complete the Work of this Section.
 2. Submit manufacturer's technical product data, including specifications and installation instructions, on the jacketing forms to be used, to show compliance with the Contract Documents, including a drawing which shows method of support, spacing and stabilization of formwork.
 3. Manufacturer's specifications on the pumping equipment used to place the epoxy grout.
 4. Supplier's technical product data, including specifications and installation instructions for the epoxy grout.
- C. Production schedule for placing pile jacket forms, and when pumping the epoxy grout on a daily basis for the duration of the Project.
 - D. Shop Drawings, detailing at a minimum location of standoff spacers, formwork and bracing details, and bottom seal details, proposed method of installation shall be prepared by the contractor and submitted for approval prior to any field installation.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver the specified products in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged or contaminated materials shall be removed from the site immediately, at Contractor's expense.
- B. Store pile jackets, epoxy grout, binders and accessories together until use as recommended by the manufacturer.
- C. Protect pile jackets, epoxy grout, binders and accessories from damage, dirt, dampness and direct sunlight during storage.
- D. Handle all pile protection system components in accordance with manufacturer's written instructions.

PART 2 – PRODUCTS
2.01 MANUFACTURERS

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A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Sika US, Sika Corporation, 201 Polito Ave, Lindhurst NJ 07071

Phone: 800-933-7452

2. Fox Industries Inc., 3100 Falls Cliff Road, Baltimore, MD 21211

Phone: 888-760-0369; www.fox-ind.com

3. 5 Star Marine, 750 Commerce Drive, Fairfield CT 06825,

Phone: 800-338-3145; www.5star-marine.com

4. Denso North America, 9747 Whithorn Drive, Houston Texas 77095

B. Core Plug Cement: Where applicable, the following products may be incorporated into the Work include, but are not limited to, the following:

1. Speed Crete Blue Line by The Euclid Company

2. SikaTop 123 Plus by Sika USA

2.02 MATERIALS

A. Jackets

1. Jackets shall be inert and corrosion-free, with an interlocking joint, and fabricated from fiberglass and polyester resins to a minimum thickness of 1/8" unless otherwise shown on the Contract Drawings.

2. Jackets shall meet the following material properties:

a. Water Absorption (ASTM D570) 1% max.

b. Ultimate Tensile Strength (ASTM D638)

Longitudinal, transverse and diagonal 15,000 psi

c. Flexural Strength (ASTM D796) 25,000 psi

d. Flexural Modulus of Elasticity (ASTM D790) 700,000 psi min.

e. Barcol Hardness (ASTM D2583) 45+5

f. Color: Translucent

3. The inside face of the jacket shall be textured similar to that of a sandblasted surface and contain no bond-inhibiting agents that contact the hydro-ester epoxy grouts.

4. The jackets shall be provided with non-corrosive "standoffs", which will secure the jackets in the required positions.

5. Jackets shall be capable of being opened, in order to encapsulate the pile, and then returned to its original shape without damage.
6. Jackets shall be equipped with a compressible sealing strip at the bottom, which will effectively seal the bottom of the annular space between the pile and jacket.

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B. Pourable Epoxy Grout

1. Epoxy grout shall be composed of a binder and extender meeting the following:
 - a. Epoxy Binder: The binder shall be a two component (2:1 ratio) hydro-ester epoxy that is moisture insensitive for applications both above and below water that adheres to wet concrete, steel and pile jackets.
 - b. Epoxy Extender: The extender shall be compatible with the hydro-ester epoxy binder and, when mixed with the epoxy binder, produce a smooth flowing pourable grout.
2. Mixing
 - a. The binder and extender shall be mechanically mixed in strict accordance with the manufacturer's instructions to (1) part binder combined with a maximum (3) parts extender.
 - b. When mixed in the ratio of (1) part binder to (3) parts extender by volume, the minimum compressive strength of two inch cubes at 7 days, at a 66 to 74 deg. F curing temperature, shall be 8000 psi when tested in accordance with ASTM C579 Method B.

C. Trowel Grade Epoxy Grout

1. Trowel grade epoxy grout shall be composed of a binder and filler meeting the following:
 - a. Epoxy Binder: The binder shall be a two component (2:1 ratio) trowel grade hydro-ester epoxy that is moisture insensitive for applications both above and below water that adheres to wet concrete, steel and pile jackets.
 - b. Filler: The filler shall be kiln-dried silica sand consisting of natural sand having a fineness modulus of between 2.40 and 3.0. Fifteen (15) to thirty (30) percent should pass the No. 50 screen and five (5) to ten (10) percent should pass the No. 100 screen. The sand shall be sharp, hard and strong and shall be free from adherent coating, salt, clay, loam, alkali, organic material or other deleterious substances.
2. Mixing
 - a. The binder and filler shall be mechanically mixed in strict accordance with the manufacturer's instructions to (1) part binder combined with a maximum (1) part filler.
 - b. When mixed in the ratio of (1) part binder to (1) part filler by volume, the minimum compressive strength of two inch cubes at 7 days, at a 66 to 74 deg. F curing temperature, shall be 8000 psi when tested in accordance with ASTM C579 Method B.

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D. Concrete:

1. All concrete work shall conform to requirements of the ACI building codes requirement for structural concrete.
2. Concrete shall meet the following requirements:
 - a. All concrete shall be air entrained, $6\% \pm 1.5\%$ by volume, for $\frac{3}{4}$ " pea gravel aggregate. No carbonaceous aggregates shall be used.
 - b. All concrete mix shall be mixed, transported and placed in accordance with ACI standards 318 and 304.
 - c. Follow ACI standard 211.1 for mixing water requirements.
 - d. All concrete shall have compressive strength $F_c' = 5,000$ psi at 28 days with a maximum w/c ratio of 0.40 unless otherwise noted.
 - e. Maximum concrete slump shall be 4", prior to the addition of plasticizing admixtures.
 - f. Test cylinders shall be taken from the mixer in accordance with ASTM C172 and the project specifications.
 - g. Construction joints shall be no more than 40 ft on center, unless otherwise noted.
 - h. Concrete shall have 5.4 gal/cy of corrosion inhibitor.

E. Reinforcing:

1. Concrete cover measured to the face of the reinforcing bar (including ties and stirrups) shall be 3" unless otherwise indicated in the Drawings.
2. All splice lengths shall be greater than or equal to $36 \times$ reinforcing bar diameter for #6 bars and smaller. All splice lengths shall be greater than or equal to $45 \times$ reinforcing bar diameter for #7 bars and larger.
3. All reinforcing bars shall be new billet steel conforming to ASTM A615, grade 60.
4. All welded wire mesh shall conform to ASTM 185.
5. All reinforcing bars and welded wire mesh shall be epoxy coated in conformance with ASTM A775.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

The contractor shall provide all labor, material, equipment and supervision necessary to clean the piles and the bottom surface of the pile caps in the areas to be jacketed, as required by the work

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and specified hereunder. The work shall include, but not be limited to, the following for each pile to be jacketed.

- A. All concrete pile surfaces to be covered with pile jackets shall be thoroughly cleaned of all marine growth, loose and unsound concrete, or any other deleterious material that would prevent proper bonding, as determined by the Engineer.
- B. The underside of the concrete pile cap shall be similarly cleaned of all marine growth, loose and deteriorated concrete, incipient spalls, etc.
- C. All exposed steel reinforcement shall be cleaned of all rust and scale prior to installation of the pile jacket.
- D. The cleaning operation shall result in a clean sound surface, free from materials that would inhibit bonding of the placed grout system to the existing concrete pile or cap surface. Cleaned piles must be encased with the protective grout/concrete system within three days to preclude new marine growth or contamination, or cleaning must be repeated.
- E. The extent of cleaning shall be limited to comply with the heretofore requirements, without reducing or compromising the structural integrity of the piles and pile caps.
- F. Cleaning of concrete may be accomplished by mechanical scalers, hand tools, high-pressure water jet, abrasive blasting, or other approved methods that will yield the desired result.
- G. Placement of pile jackets will not be permitted until the concrete surfaces are cleaned to the satisfaction of the Engineer.

3.02 JACKET PLACEMENT

The Contractor shall provide all labor, materials, equipment and supervision necessary to furnish, install and support the jackets as shown on the drawings and specified below. Contractor shall remove any obstructions that impede jacket placement without damaging piles or cap beams.

- A. Prior to installing jackets, place trowel grade epoxy into female portion of joint, spread jacket open and place around pile, and then allow jacket to return to its original shape to engage the interlocking joint.
- B. Install self-drilling, self-tapping stainless steel screws, and center and position jacket to the proper elevation. Provide timber wedges and bracing as required to prevent movement due to tidal and wave action prior to and during grout placement.

3.03 GROUT PLACEMENT

- A. The epoxy grout shall be injected, at equal pressures, into the lower ports at the bottom of the pile jacket. The grout shall be continuously injected until the grout reaches the top injection port of the jacket.
- B. The Contractor, at his option, may install multiple levels of grout ports to minimize the pumping pressures. If this option is selected, inject grout first at the lowest grout port. As the grout appears at the next higher port level, and it has been determined that the space between the pile and the jacket is filled to that level, cap the lower port and continue injecting grout through the next

higher open port. Repeat this process from port level to port level until the grout reaches the top of the jacket. Ports must be on alternating faces of the pile.

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- C. The injection process shall be continuous, except when briefly interrupted to relocate the injector to the next higher port. During grout placement, the injection flow rate shall be controlled to prevent air and/or water entrapment within the pile jacket cavity. A constant tremie must be maintained.
- D. Remove any bracing materials after completion of grout injection and clean jacket exterior of any excess grout or other extraneous material.
- E. Mixing and pumping equipment approved by the Engineer shall be used in preparation and handling of the grout. All oil and other rust inhibitors shall be removed from the mixing drums, stirring mechanisms and other portions of the equipment in contact with the grout before the mixers are used.
- F. All materials shall be accurately measured by volume or weight as they are fed into the mixer. The quantity of water shall be such as to produce a grout having a pumpable consistency, but in no case should it be more than required for such purpose. Time of mixing shall not be less than one minute.
- G. Six (6) inch thick (minimum) tremie seals shall be poured at the bottom of the form and allowed to set for 24 hours prior to pouring the entire height of the form to prevent river bottom sediment from rising and mixing with the grout.

3.04 CONCRETE PLACEMENT

- A. Concrete trucks are specifically **PROHIBITED** on the pier, excepting those areas for which pile jacketing has been complete for a minimum of 14 days. Concrete buggies or conveyor systems must be used to transport the concrete from the truck to the batch mixer located immediately adjacent to the pump hopper.
- B. Mixing and pumping equipment approved by the Engineer shall be used in preparation and handling of the concrete. All oil and other rust inhibitors shall be removed from the mixing drums, stirring mechanisms and other portions of the equipment in contact with the concrete before the mixers are used.
- C. All materials shall be accurately measured by volume or weight as they are fed into the mixer. The quantity of water shall be such as to produce a concrete having a pumpable consistency, but in no case should it be more than required for such purpose. Time of mixing shall not be less than one minute.
- D. The concrete shall be pumped into place using a single hose placed inside the form. The hose shall be placed so that the end is within 6 inches of the bottom before pumping begins. Concrete shall not be allowed to fall freely through water or air and shall be injected in such a manner as to assure uniformly sound, dense and undiluted concrete in the pile jacket. Unsatisfactory concrete resulting in separation of aggregates and honeycombing will not be accepted. A constant tremie must be maintained and injection ports must be on alternating sides of the piles.

- E. Six (6) inch thick (minimum) tremie seals shall be poured at the bottom of the form and allowed to set for 24 hours prior to pouring the entire height of the form to prevent river bottom sediment from rising and mixing with the concrete.

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- F. During all concrete placing operations, Contractor shall make a constant inspection of the form, not allowing any leaks or form shifting to occur. Any leaks or shifting of forms shall be immediately repaired.
- G. All concrete shall be ready-mixed concrete, and shall be mixed and delivered in accordance with the "Specifications for Ready Mixed Concrete", ASTM C94 and as specified herein. The batch plant of the concrete producer shall be certified for compliance with the standards established by the National Ready-Mixed Concrete Association.
- H. All finished concrete shall be free of voids or any other defects.
- I. Pumping or tremieing, once started, shall be carried on as a continuous operation until the section of approved size and shape is completed.
- J. Concrete shall be conveyed as rapidly as practicable from the mixer to the pump by methods which prevent the separation or loss of ingredients. It shall be deposited, as nearly as practicable, in its final position to avoid rehandling or flowing.
- K. Concrete that has partially hardened shall not be deposited in the Work.

PART 4 - TESTING

4.01 SCOPE OF WORK

The Contractor shall provide all labor, material, equipment and supervision necessary to test the concrete and grout in accordance with the requirements stated below.

4.02 TESTING

- A. The methods used in sampling, making, curing and testing of the concrete and grout samples, either in the field or in the laboratory, shall be in accordance with the appropriate ASTM Standards and shall include but not be necessarily be restricted to the following standards:

ASTM C31 - Standard Method of Making and Curing Concrete Compressive and Flexural Test Specimens in the Field.

ASTM C39 - Standard method of Test for Compressive Strength of Cylindrical Concrete Specimens.

ASTM C94 - Standard Specification for Ready-Mix Concrete.

ASTM C138 - Standard Method of Test for Unit Weight, Yield, and Air Content of Concrete.

ASTM C172 - Standard Method of Sampling Fresh Concrete.

ASTM C192 - Standard Method of Making and Curing Concrete Test Specimens in the Laboratory.

ASTM 214 - Recommended Practice for Evaluation of Compression Test Results of Field Concrete.

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ASTM C579- Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes

- B. In the event the compressive strength of the cylinders, when tested, is below the specified minimum, the Engineer may require test cores of the hardened structures to be taken by the Contractor in accordance with ASTM Designation C42. If such test indicates that the core specimen is below the required standards, the concrete in question shall be removed and replaced by the Contractor without cost to the Owner, or additional piles will be jacketed with concrete at the direction of the Engineer, at no additional cost to the Owner.

PART 5 - GROUTING

5.01 SCOPE OF WORK

- A. Contractor shall provide all labor, material, equipment and supervision necessary install grout at the top of the jackets as shown on the drawings and outlined in the specification.

5.02 MATERIAL

- A. Grout shall be Sikadur marine Grout-Pak, as manufactured by Sika Corporation, Lyndhurst, New Jersey or as approved by the Engineer.

5.03 SURFACE PREPARATION, CONCRETE

- A. The Contractor shall ensure that the top of the new jackets are completely free of all latent epoxy, splash, foreign objects and any other material which would adversely affect the bearing capacity and bonding of the grout atop the jacket. Any such adverse conditions shall be completely removed by the contractor prior to grouting.

- B. The top of the jacket concrete shall be level and generally smooth, and free of major voids or high spots.

END OF SECTION 03310

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SECTION 03703
CONCRETE PILE RESTORATION WITH EPOXY GROUT
PART I - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work specified in this section.

1.02 DESCRIPTION OF WORK:

- A. The extent of work is shown on drawings.
B. The work shall include but is not limited to the following:
 1. Cleaning and preparation of existing concrete.

2. Excavation of soil and riprap.
3. Installation of reinforcement, as necessary.
4. Design and installation of formwork and seals.
5. Mixing the epoxy.
6. Injecting the epoxy.
7. Replacing riprap.

C. Work not included:

1. Field inspection and testing.

D. Related Work Specified Elsewhere:

1. Repair of spalled and/or delaminated concrete. See Section 03701 and 03702.

1.03 QUALITY ASSURANCE:

- A. Except as modified by governing codes and by this Specification, comply with the applicable provisions and recommendations of latest edition of the following:

1. American Concrete Institute Publications:

- a. ACI 201.1R "Guide for Making a Condition Survey of Concrete in Service".

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- b. ACI 311.4R "Guide for Concrete Inspection".
- c. ACI 546.1R "Guide for Repair of Concrete Bridge Superstructures".
- d. ACI 224.1R "Causes, Evaluation and Repair of Cracks in Concrete Structures".
- e. ACI 503R "Use of Epoxy Compounds with Concrete".
- B. Where the language in any of the documents referred to herein is in the form of a recommendation or suggestion, such recommendations or suggestions shall be deemed to be mandatory under this Contract.
- C. Conflicts: Conform to requirements of above standard unless specified otherwise below. In case of apparent conflict between standards, or between standards and the specifications herein below, refer the matter to the Engineer, whose decision shall be final.
- D. Owner's acceptance: Owner reserves the right to reject or accept supplier of materials.
- E. Workmanship: The Contractor is responsible for correction of restoration work which does not conform to the specified requirements, including strength, tolerances, and finishes. Correct deficiencies as directed by the Engineer.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's data, to include: application and installation instructions, technical data sheets, material safety data sheets, and any other items as requested by the Engineer.
- B. Shop Drawings, detailing, at a minimum, location of stand off spacers, formwork and bracing details, and bottom seal details, proposed method of installation shall be prepared by the contractor and submitted for approval prior to any field installation.

1.05 PRODUCT HANDLING

- A. Deliver the specified products in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged or contaminated materials shall be removed from the site immediately, at contractor's expense.
- B. Store and condition the specified products as recommended by the manufacturer.
- C. Condition the specified epoxy resin mortar components as specified by the manufacturer.

1.06 JOB CONDITIONS

- A. Environmental Conditions: Do not apply material if ambient surface temperature or water temperature is below manufacturer's minimum application temperature.

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- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the materials. Contractor shall restore any damage incurred to the work zone at his own expense.

PART II - MATERIAL

2.01 EPOXY RESIN ADHESIVE FOR EPOXY INJECTION

- A. The epoxy resin adhesive shall be a 2-component, solvent-free, moisture-insensitive, epoxy adhesive of low viscosity and high strength, formulated specifically for injecting into the annulus of submerged formwork, around a concrete pile, up to one inch thick. It shall meet ASTM C 881 Type I, Grade B and C.

B. PROPERTIES OF THE CURED MATERIAL

1. Compressive Properties (ASTM D-695) at 28 days
 - a. Compressive Strength 8,000 psi min.
 2. Tensile Properties (ASTM D-638) at 14 days
 - a. Tensile Strength 7,000 psi min.
 - b. Elongation at Break 4-5%
 3. Flexural Properties (ASTM D-790) at 14 days
 - a. Modulus of Rupture 12,000 psi min.
 4. Shear Strength (ASTM D-732) at 14 days 4,500 psi min.
 5. Total Water Absorption (ASTM D-570) at 7 days 1.5% max.
(2 hours boil)
 6. Bond Strength (ASTM C-882) Hardened Concrete to Hardened Concrete
 - a. 2 day (dry cure) 2,400 psi min.
 - b. 14 day (moist cure) 2,300 psi min.
- ### **2.02 FIBERGLASS PILE JACKETS**

- A. Pile Jackets shall be fiberglass and polyester resin with interlocking joints. The minimum jacket thickness shall be 1/8" unless otherwise shown in the plans. The inside face of the jacket shall be textured similar to a sandblasted surface and have no bond inhibiting agents. Non corrosive standoffs, which will maintain the jackets in the required positions, shall be provided as

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necessary. The jacket shall be capable of being opened, placed around a pile (and reinforcing cage where applicable), then returned to its original shape without damaging the jacket.

B. Properties of the Fiberglass Pile Jacket

1. Water Absorption Properties (ASTM D-570)
 - a. Water Absorption 1% max.
2. Tensile Properties (ASTM D-638)
 - a. Tensile Strength (Any Orientation) 15,000 psi
3. Flexural Properties (ASTM D-796, ASTM D-790)
 - a. Flexural Strength 25,000 psi
 - b. Flexural Modulus of Elasticity 700,000 psi
4. Hardness Properties (ASTM D-2583)
 - a. Barcol Hardness 45+5

PART III - APPROVALS

3.01 ACCEPTABLE CONTRACTORS:

- A. The epoxy injection work shall be performed by an approved Contractor associated with a nationally known and recognized manufacturer.
- B. The approved Contractor shall have satisfactorily completed a program of instruction sponsored by the manufacturer.
- C. The approved Contractor must have, in his possession at the project site, the manufacturers printed literature on the epoxy resin adhesive.
- D. The approved Contractor must furnish a notarized certification that the material proposed for use meets all of the above requirements.

3.02 ACCEPTABLE PRODUCTS:

- A. Sikadur 35, HI-MOD LV, as manufactured by Sika Corporation, Lyndhurst, New Jersey, is considered to conform to the requirements of this specification for pile encapsulation and restoration.

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- B. FX-70, pile protection system, as manufactured by Fox Industries Incorporated, Baltimore, Maryland, is considered to conform to the requirements of this specification for pile encapsulation and restoration.
- C. Variations from materials specified - Should the Contractor wish to use any brand or type of material other than as specified herein, he shall so state in writing to the Engineer naming the proposed substitution and manufacturer. This statement shall be accomplished by (a) A certificate of compliance with test results from an approved independent testing laboratory that the proposed substitute meets or exceeds the specified requirements and has been tested in accordance with the specified test standards; (b) Documented proof that the proposed brand or type of material has a proven record of performance when used in the intended application as confirmed by successful installations in place a minimum of ten years, which the Engineer can verify; (c) Certification that the components are supplied by the same manufacturer so as to insure compatibility of material and to maintain single-source manufacturer responsibility.

PART IV - EXECUTION

4.01 SURFACE PREPARATION

- A. Concrete surface must be clean and sound. Remove dust, laitance, grease, curing compounds, waxes, impregnations, foreign particles, coatings, efflorescence, disintegrated materials, and any other bond breaking materials, from the concrete surface by mechanical means, i.e. – wire brush, high-pressure waterblasting, etc., as approved by the Engineer.

4.02 APPLICATION

- A. Mix the epoxy resin components thoroughly, in the proper proportion, in accordance with the manufacturers specifications.
- B. Placement procedure:
1. Formwork must be sufficiently designed, installed, and braced to resist pumping and or static pressures exerted by the epoxy mortar, depending on placement method. This may include the installation of a “bottom plug” to prevent blowout.
 2. Tremie Method: In accordance with industry standards and specifications, epoxy mortar shall not be allowed to drop to the bottom of the positioned and bottom-sealed formwork from the top. The epoxy mortar shall flow through a “tremie” hose extending down to the bottom of the form. The nozzle must remain submerged in the mortar as the mortar is pumped.
 3. Pumping Method: One or more injection ports installed at the bottom of the formwork shall be used to inject epoxy mortar under pressure. The port(s) shall be placed a minimum of 9 inches above the bottom plug and 180° from the formwork connections. Formwork must be designed to resist pump pressure.

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C. Adhere to all limitation and cautions for the epoxy resin adhesives in the manufacturers current printed literature.

4.03 CLEANING

A. Epoxy resin shall be cleaned from work area in accordance with the manufacturers specifications.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

Part V - COMPENSATION

5.01 METHOD OF MEASUREMENT

A. Pile encasement with epoxy resin mortar shall be measured by the lineal foot grouted in place. The quantity to be paid for shall be the lineal feet grouted actually placed.

5.02 BASIS OF PAYMENT

A. The pile encasement with epoxy resin mortar will be paid at the contract unit bid price per lineal foot grouted, as stipulated in the schedule of Bid Prices, which payment shall be full compensation for furnishing and installing all materials, labor, tools, equipment, and other incidentals necessary to complete the specified operation. Payment will be made on the percentage of the work completed during each estimated period as determined by the Owner. Contractor shall provide separate unit bid price per lineal foot for reinforced and unreinforced pile restoration.

END OF SECTION 03703

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