

BATTERY PARK CITY AUTHORITY

REQUEST FOR PROPOSALS

FOR

Tribeca Bridge Painting

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I. SUMMARY

The Tribeca Pedestrian Bridge (the “Bridge”) connects the northern section of Battery Park City, at Chambers Street, across West Street to the Tribeca neighborhood of Manhattan. 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 paint the Bridge in accordance with the terms of this Request for Proposals (“RFP”) (the “Project”). Minority-Owned Business Enterprises (“MBE”), Women-Owned Business Enterprises (“WBE”) and Service-Disabled Veteran-Owned Business Enterprises (“SDVOB”) 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 mile-long 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 open spaces in and around Battery Park City’s residential and commercial areas, which is undertaken in conjunction with the Battery Park City Parks Conservancy Corporation (“BPCPC”). Together, BPCA and BPCPC maintain 36 acres of parks, playgrounds and open spaces, including the esplanade. 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 BPCPC headquarters.

To obtain a copy of BPCA’s most recently completed audited financial statements, please visit BPCA’s official website at www.bpca.ny.gov. 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. Proposer will be responsible for the services delineated in the Scope of Work attached hereto as Exhibit A (the "Services Required").
- 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: May 2, 2016
- Pre-proposal meeting: May 11, 2016 at 9:30 am. Meeting Location: BPCA Offices, 200 Liberty Street 24th floor, New York, NY 10281 (attendance is highly recommended).
- Deadline to submit questions to BPCA: May 17 2016 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: June 1, 2016 (via BPCA Website).
- **DUE DATE FOR RESPONSES TO RFP: June 13, 2016 by 5:00 p.m. (the "Due Date").**
- Contract start date: July 2016.

B. Anticipated Contract Term/Value

It is anticipated that the term of the contract awarded pursuant to this RFP (the "Contract") will be for a period of twelve (12) months. BPCA reserves the right to terminate the Contract at any time, with or without cause.

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 State of New York.
- 2) The Proposer must complete and submit all mandatory forms with its Proposal.
- 3) The Proposer must have at least five (5) years' experience in performing bridge painting services in New York metropolitan area, including experience in Manhattan.

V. GENERAL REQUIREMENTS

A. Questions regarding MBE/WBE/SDVOB 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/SDVOBs and equal employment opportunities for minority group members and women.

For questions relating to MBE/WBE/SDVOB participation, joint ventures and sub-contracting goals ONLY, please contact "MBE/WBE/SDVOB 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/SDVOB 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 June 13, 2016.

Proposers must submit six (6) paper copies of their Proposals and one (1) electronic CD-Rom copy in a sealed package clearly marked "**Tribeca Bridge Painting**" 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 that 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 – Tribeca Bridge Painting**" 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://bpca.ny.gov/wp-content/uploads/2015/03/Vendor-Responsibility-Questionnaire.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) Firm's discussion of its understanding of the Services Required (see Section III).
- 4) Firm's Responses to the RFP Questions and RFP Additional Information Request, set forth below.
- 5) Firm's Cost Proposal, as described below.

C. RFP Questions and Requests for Information

1. Describe your firm's background, staff, and history as they may be relevant to the Services Required, with an emphasis on bridge painting in New York City.
2. What is your firm's experience in coordinating with NY City Department of Transportation and NY State Department of Transportation for street or lane closure permits when necessary for bridge painting?
3. Has your firm or any of the firm's partners/employees been disciplined or censured by any regulatory body within the last 5 years? If so, please describe the relevant facts.
4. Has your firm filed for bankruptcy or reorganization or had bankruptcy proceedings initiated against it within the last 5 years? If so, please describe the relevant facts.
5. Are there any potential conflict of interest issues posed by your 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, a list of whom is attached as Exhibit C.
8. Identify the Lead project manager who will be the primary contact and lead person in performing the Project for BPCA, and who will be listed as a "Lead PM" 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 Project, which shall address your proposed procedures and approach for staffing, performance and completion of the Project.
11. Provide a list of any proposed sub-contractors that you propose to retain for the Project.
12. Discuss your company's safety program and the safety measures that you intend to employ with respect to work performed in, adjacent to and over public spaces.
13. 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.
14. Please provide any additional information and/or credentials that 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 Required

D. RFP Additional Information Request

1) Insurance/Bonding

- A) Do you impose any limitations on liability through your contracts?
- B) The selected Proposer will be required to provide the types and amounts of insurance as listed below, for the duration of its performance of the Work. The insurance policies listed below must also conform to the applicable terms of the Contract, as shown in BPCA's sample form of contract attached as **Exhibit C**. Provide a certificate(s) of insurance demonstrating Proposer's compliance with each of the following insurance requirements:
 - Commercial General Liability Insurance, written on ISO Form CG 00 001 or its equivalent and with no modification to the contractual liability coverage provided therein, shall be provided on an occurrence basis and limits shall not be less than:
 - \$1,000,000 per occurrence
 - \$2,000,000 General Aggregate
 - \$2,000,000 Products / Completed Operations Aggregate

BPCA, BPCPC, and the State of New York must be protected as additional insured on ISO Form CG 2010 (11/85) or its equivalent and must be included as such on all subcontracts. The Proposer must maintain Products / Completed Operations coverage for no less than three years after the work is completed.

- Automobile Liability Insurance with a Combined Single Limit of not less than \$1,000,000. Coverage must apply to the Proposer's owned, hired, and non-owned vehicles and protect BPCA, BPCPC, and the State of New York as additional insured.

- Workers' Compensation, Employer's Liability, and Disability Benefits shall not be less than statutory limits, including United States Longshore and Harbor Workers Act coverage as applicable to the operations of the Proposer.
- Umbrella Liability Insurance at a limit not less than \$10,000,000 per occurrence and in the aggregate. BPCA, BPCPC, and the State of New York must be protected as additional insured and must be included as such on all subcontracts.
- Contractor's Pollution Liability Insurance covering bodily injury, property damage, clean-up costs/remediation expenses and legal defense costs. Such insurance shall provide coverage for sudden and non-sudden pollution conditions arising out of the proposer's operations at the Premises. The limit of coverage shall not be less than \$5,000,000 per occurrence. BPCA, BPCPC, and the State of New York must be protected as additional insured and must be included as such on all subcontracts.

The total cost of the insurance, as listed above, must be incorporated into the Cost Proposal. The additional insured protection afforded BPCA, BPCPC, and the State of New York must be on a primary and non-contributory basis. All policies must include a waiver of subrogation in favor of BPCA, BPCPC, and the State of New York, and no policies may contain any limitations / exclusions for New York Labor Law claims.

All of the carriers that provide the above required insurance must provide direct written notice of cancellation or non-renewal to BPCA, BPCPC, and the State of New York at least 30 days before such cancellation or non-renewal is effective, except for cancellations due to non-payment of premium, in which case 10 days written notice is acceptable.

Bonding: Provide a letter from your surety(ies) stating that you are able to provide a payment and performance bond as required by the standard form of contract (Exhibit C).

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 contact.

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 addendum submitted by BPCA with regard to this Proposal (if applicable) and a signed acknowledgment of receipt of each addendum.
- c. Submit a proposed safety plan for the Project with your Proposal.
- d. Submit a bar chart schedule for completion of the Services Required. This should include sequencing of the work, manpower staffing levels, work shifts, and a clear depiction of all project milestones and successful overall completion.

- e. Submit a schedule of values for the project. This should include but not limited to all cleaning and painting of the bridge, general conditions, mobilization, bonds, insurances and permitting.
- 4) **Financial Statements**: Please provide a copy of your firm's most recent Audited Financial Statements (within the last year).

E. Cost Proposal

Each Proposer must submit six copies of its Cost Proposal:

To submit a complete Cost Proposal, Proposer must submit each of the following:

- 1) Cost proposal in the form attached hereto as Exhibit E ("Cost Proposal Form").
- 2) Labor rates in the form attached hereto as Exhibit F ("Technical Salary Rates").
- 3) Schedule of Values attached hereto as Exhibit H ("Schedule of Value")

The Cost Proposal, regardless of whether it is bound, must be submitted in its own separate envelope within the sealed package containing all other Proposal documents. For the avoidance of doubt, the Cost Proposal must be submitted separately and unbound from the remainder of the Proposal documents.

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 that 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 in its performance of the Services Required for BPCA.

The selection process will begin with the review and evaluation of each Proposal. 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. The evaluation process will be conducted in a comprehensive and impartial manner 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:

Evaluation Factors:

| | |
|--|-----|
| 1. Relevant experience and expertise in bridge painting in urban setting, especially NYC | 35% |
| 2. Staffing | 18% |
| 3. Scheduling | 15% |
| 4. Diversity Practices Questionnaire | 10% |
| 5. Proposed M/WBE utilization plan and/or Firm M/WBE status | 5% |
| 6. Proposed SDVOB utilization plan and or Firm status | 2% |

D. Basis for Contract Award

The Contract will be awarded to the highest 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 and represents the best value for BPCA given the requirements of the Project.

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 DIVESTMENT 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 sub consultant 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

Tribeca Bridge Painting

The selected proposer shall furnish all labor, materials, equipment and services necessary to complete the Tribeca Bridge repainting work (the “Work”) as reflected in the drawings and specifications attached hereto (the “Construction Documents”). The Work shall include, but not be limited to, the following items:

1. Obtaining all required permits for lane closures, and coordinating the construction schedule through BPCA with state and city entities. It should be assumed that lane closures will only be allowed overnight; however, if other hours are permitted, a deduct cost shall be provided by the contractor to BPCA.
2. Mobilization to the site.
3. Furnishing, installing, and maintaining environmental controls and environmental control structures.
4. Furnishing, installing, and maintaining a Class B Containment structure.
5. Furnishing, installing, and maintaining temporary works.
6. Providing and maintaining temporary traffic control devices as required.
7. Removing the stainless steel protective mesh on bridge’s west stairwell and storage of the mesh at location chosen by contractor.
8. Cleaning, demolition and authorized disposal of components associated with repairs.
9. Provision of Medical Testing/Exposure Monitoring for all workers on site.
10. Furnishing, installing, and maintaining a temporary chain link fence and gate at specified locations on Contract Drawings.
11. Provision of and adherence to Basic Work Zone Traffic Control Plan.
12. Securing of all necessary Environmental and Regulatory Permits to complete the work.
13. Pressure washing of steel bridge and adjacent structure members.
14. Surface Preparation of all specified bridge members and embedded steel sections in adjacent structures to SSPC SP-10.
15. Treating and disposing of paint removal waste.
16. Provision of primary, intermediate, and final coatings as specified in Contract Specifications.
17. Cleaning of all windows on bridge upon completion of surface preparation and recoating work. Power-wash cleaning of exterior glass and cleaning of interior glass per BPCA’s regular cleaning schedule.
18. Furnishing and installation of bird barriers.
19. Closing out all acquired permits.
20. Demobilization from the site.

EXHIBIT B

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

Pursuant to New York State Executive Law Article 15-A and 5 NYCRR §§140-145, BPCA recognizes its obligation under the law to promote opportunities for maximum feasible participation of certified MBEs/WBEs and the employment of minority group members and women in the performance of BPCA contracts. Pursuant to New York State Executive Law Article 17-B and 9 NYCRR §252, BPCA recognizes its obligation under the law to promote opportunities for maximum feasible participation of certified SDVOBs.

In 2006, the State of New York commissioned a disparity study to evaluate whether MBEs/WBEs 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 MBEs/WBEs in state procurement contracting versus the number of MBEs/WBEs 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 MBEs/WBEs 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 MBEs/WBEs

For purposes of this solicitation, BPCA hereby establishes an overall goal of 30% for MBE/WBE participation, **15%** for MBE participation and **15%** 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 MBEs/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 MBEs/WBEs can be viewed at: <https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp?TN=ny&XID=7562>. 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 MBEs/WBEs had 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 demonstrate its good faith efforts to achieve its goals for the utilization of MBEs/WBEs by submitting evidence thereof through the New York State Contract System (the “NYSCS”), which can be viewed at <https://ny.newnycontracts.com>, provided, however, that a Proposer may arrange to provide such evidence via a non-electronic method by contacting BPCA. Please note that the NYSCS is a one stop solution for all of your MBE/WBE and Article 15-A contract requirements. For additional information on the use of the NYSCS to meet the Proposer’s MBE/WBE requirements please see the attached MBE/WBE guidance from the New York State Division of Minority and Women’s Business Development, “Your MWBE Utilization and Reporting Responsibilities Under Article 15-A.”

- A. Additionally, a Proposer agrees to submit a Utilization Plan with their bid or Proposal as evidence of compliance with the foregoing. 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.

Business Participation Opportunities for SDVOBs

For purposes of this solicitation, BPCA hereby establishes an overall goal of 6% for SDVOB participation. A Contractor must document good faith efforts to provide meaningful participation by SDVOBs as subcontractors or suppliers in the performance of the Contract and Contractor agrees that BPCA may withhold payment pending receipt of the required SDVOB documentation. The directory of New York State Certified SDVOBs can be viewed at: http://www.ogs.ny.gov/Core/docs/CertifiedNYS_SDVOB.pdf. For guidance on how BPCA will determine a Contractor's "good faith efforts," refer to 9 NYCRR §252.2(f)(2).

In accordance with 9 NYCRR §252.2(s), Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the SDVOB participation goals set forth in the Contract, such finding constitutes a breach of Contract and Contractor shall be liable for damages as specified in the Contract.

Such damages shall be calculated based on the actual cost incurred by BPCA related to BPCA's expenses for personnel, supplies and overhead related to establishing, monitoring and reviewing certified SDVOB programmatic goals.

- A. Additionally, a Proposer agrees to submit a Utilization Plan with their bid or Proposal as evidence of compliance with the foregoing. 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 SDVOB

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 SDVOB 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 SDBVOB Contractor Compliance & Payment Report to BPCA on a monthly basis over the term of the Contract documenting the progress made toward achievement of the SDVOB goals of the Contract.

Equal Employment Opportunity Requirements

By submission of a bid or Proposal in response to this RFP, the Proposer/Contractor agrees with all of the terms and conditions of the attached M/WBE – Equal Employment Opportunity Policy Statement. The Contractor is required to ensure that it shall 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, except where such work is for the beneficial use of the Contractor, 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.

The Proposer further agrees to submit a MBE/WBE and Equal Employment Opportunity Policy Statement, Form # 4, to BPCA with their Proposal.

To ensure compliance with Article 15-A, Proposer further agrees, where applicable, 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, upon request, submit to BPCA a workforce utilization report identifying the workforce actually utilized on the Contract, if known, through the NYSCS; provided, however, that a Proposer may arrange to provide such report via a non-electronic method by contacting BPCA.

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/SDVOB participation, joint ventures and sub-contracting goals ONLY, please contact Mr. Anthony Peterson at 212.417.2337.



Your MBE/WBE Utilization and Reporting Responsibilities Under Article 15-A

The New York State Contract System (“NYSCS”) is your one stop tool for compliance with New York State’s MBE/WBE Program. It is also the platform New York State uses to monitor state contracts and MBE/WBE participation.

GETTING STARTED

To access the system, please login or create a user name and password at <https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp?TN=ny&XID=7562>. If you are uncertain whether you already have an account set up or still need to register, please send an email to the customer service contact listed on the Contact Us & Support page, or reach out to your contract’s project manager. For verification, in the email, include your business name and contact information.

VENDOR RESPONSIBILITIES

As a vendor conducting business with New York State, you have a responsibility to utilize minority- and/or women-owned businesses in the execution of your contracts, per the MBE/WBE percentage goals stated in your solicitation, incentive proposal or contract documents. NYSCS is the tool that New York State uses to monitor MBE/WBE participation in state contracting. Through the NYSCS you will submit utilization plans, request subcontractors, record payments to subcontractors, and communicate with your project manager throughout the life of your awarded contracts.

There are several reference materials available to assist you in this process, but to access them, you need to first be registered within the NYSCS. Once you log onto the website, click on the **Help & Support** >> link on the lower left hand corner of the Menu Bar to find recorded trainings and manuals on all features of the NYSCS. You may also click on the **Help & Tools** icon at the top right of your screen to find videos tailored to primes and subcontractors. There are also opportunities available to join live trainings, read up on the “Knowledge Base” through the Forum link, and submit feedback to help improve future enhancements to the system. Technical assistance is always available through the **Contact Us & Support** link on the NYSCS website (<https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp?TN=ny&XID=7562>).

For more information, contact your project manager.

MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES – EQUAL EMPLOYMENT OPPORTUNITY POLICY STATEMENT

MBE/WBE AND EEO POLICY STATEMENT

I, _____ (the “Contractor”), agree to adopt the following policies with respect to the project being developed at, or services rendered to, the Battery Park City Authority (“BPCA”).

MBE/WBE

This organization will and will cause its contractors and subcontractors to take good faith actions to achieve the MBE/WBE contract participations goals set by the State for that area in which the State-funded project is located, by taking the following steps:

- (1) Actively and affirmatively soliciting bids for contracts and subcontracts from qualified State certified MBEs or WBEs, including solicitations to MBE/WBE contractor associations.
- (2) Requesting a list of State-certified MBEs/WBEs from BPCA and soliciting bids from these MBEs/WBEs directly.
- (3) Ensuring that plans, specifications, request for proposals and other documents used to secure bids will be made available in sufficient time for review by prospective MBEs/WBEs.
- (4) Where feasible, dividing the work into smaller portions to enhance participations by MBEs/WBEs and encourage the formation of joint venture and other partnerships among MBE/WBE contractors to enhance their participation.
- (5) Documenting and maintaining records of bid solicitation, including those to MBEs/WBEs and the results thereof. The Contractor will also maintain records of actions that its subcontractors have taken toward meeting MBE/WBE contract participation goals.
- (6) Ensuring that progress payments to MBEs/WBEs are made on a timely basis so that undue financial hardship is avoided, and that bonding and other credit requirements are waived or appropriate alternatives are developed to encourage MBE/WBE participation.

EEO

(a) This organization will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability or marital status, will undertake or continue existing diversity programs to ensure that minority group members are afforded equal employment opportunities without discrimination, and shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts.

(b) This organization shall state in all solicitation or advertisements for employees that in the performance of the State contract all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex disability or marital status.

(c) At the request of BPCA, this organization shall request that each employment agency, labor union, or authorized 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 this organization’s obligations herein.

(d) The Contractor shall comply with the provisions of the Human Rights Law, all other State and Federal statutory and constitutional non-discrimination provisions. The 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.

(e) This organization will include the provisions of sections (a) through (d) of this agreement in every subcontract in such a manner that the requirements of the subdivisions will be binding upon each subcontractor as to work in connection with the State contract.

Agreed to this _____ day of _____, 2015

By _____

Print: _____ Title: _____

_____ is designated as the Contractor's Minority Business Enterprise Liaison responsible for administering the Minority and Women-Owned Business Enterprises - Equal Employment Opportunity (MBE/WBE - EEO) program.

MBE/WBE Contract Goals

30% Minority and Women's Business Enterprise Participation

____ % Minority Business Enterprise Participation

____ % Women's Business Enterprise Participation

EEO Contract Goals (if applicable)

____ % Minority Labor Force Participation

____ % Female Labor Force Participation

(Authorized Representative)

Title: _____

Date: _____

Diversity Practices Questionnaire

I, _____, as _____ (title) of _____ firm or company (hereafter referred to as the company), swear and/or affirm under penalty of perjury that the answers submitted to the following questions are complete and accurate to the best of my knowledge:

1. Does your company have a Chief Diversity Officer or other individual who is tasked with supplier diversity initiatives? Yes or No

If yes, provide the name, title, description of duties, and evidence of initiatives performed by this individual or individuals.

2. What percentage of your company's gross revenues (from your prior fiscal year) was paid to New York State certified minority and/or women-owned business enterprises as subcontractors, suppliers, joint-venture's, partners or other similar arrangement for the provision of goods or services to your company's clients or customers?

3. What percentage of your company's overhead (i.e. those expenditures that are not directly related to the provision of goods or services to your company's clients or customers) or non-contract-related expenses (from your prior fiscal year) was paid to New York State certified minority- and women-owned business enterprises as suppliers/contractors?¹

4. Does your company provide technical training² to minority- and women-owned business enterprises? Yes or No

If yes, provide a description of such training which should include, but not be limited to, the date the program was initiated, the names and the number of minority- and women-owned business enterprises participating in such training, the number of years such training has been offered and the number of hours per year for which such training occurs.

5. Is your company participating in a government approved minority- and women-owned business enterprise mentor-protégé program?

If Yes, identify the governmental mentoring program in which your company participates and provide evidence demonstrating the extent of your company's commitment to the governmental mentoring program.

6. Does your company include specific quantitative goals for the utilization of minority- and women-owned business enterprises in its non-government procurements? Yes or No

If Yes, provide a description of such non-government procurements (including time period, goal, scope and dollar amount) and indicate the percentage of the goals that were attained.

7. Does your company have a formal minority- and women-owned business enterprise supplier diversity program? Yes or No

If Yes, provide documentation of program activities and a copy of policy or program materials.

8. Does your company plan to enter into partnering or subcontracting agreements with New York State certified minority- and women-owned business enterprises if selected as the successful respondent? Yes or No

If Yes, complete the attached Utilization Plan

All information provided in connection with the questionnaire is subject to audit and any fraudulent statements are subject to criminal prosecution and debarment.

Signature of
Owner/Official
Printed Name of
Signatory

¹ Do not include onsite project overhead.

² Technical training is the process of teaching employees how to more accurately and thoroughly perform the technical components of their jobs. Training can include technology applications, products, sales and service tactics, and more. Technical skills are job-specific as opposed to soft skills, which are transferable.

Title _____
Name of Business _____
Address _____
City, State, Zip _____

STATE OF _____
COUNTY OF _____) ss:

On the _____ day of _____, 201_, before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to this certification and said person executed this instrument.

Notary Public

EXHIBIT C

BPCA's standard form of contract

(attached)

CONSTRUCTION AGREEMENT

between

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

and

[NAME OF COMPANY, INC. CORP, CO.]

Dated as of **[DATE]**

Contract No. **[ENTER CONTRACT NUMBER]**

(PROJECT NAME)

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CONSTRUCTION AGREEMENT

AGREEMENT (the “**Agreement**”) made as of **[DATE]** between BATTERY PARK CITY AUTHORITY, d/b/a HUGH L. CAREY BATTERY PARK CITY AUTHORITY, (“**BPCA**”), a body corporate and politic, constituting a public benefit corporation and having a place of business at 200 Liberty Street, 24th Floor, New York, New York 10281, and **[NAME OF COMPANY]**, incorporated in the state of **[STATE]**, having an office at **[Street Address, City, Zip Code]** (“**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, 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:

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 - **[include Name, Address, etc., as applicable]**.
- (d) Artist - **[include Name, Address, etc., as applicable]**.
- (e) BPCA - as defined in the introductory clause of this Agreement. BPCA hereby designates **[BPCA Person and Title]**, 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.
- (f) Certificate of Substantial Completion - as defined in Section 8.6.
- (g) Change Order - as defined in Section 9.1(b).
- (h) Construction Manager - **[include Name, Address, etc., as applicable]**.
- (i) Contract Documents - as defined in Section 2.2.

- (j) Contract Price - as defined in Article 4.
- (k) Contract Time - the duration of time during which Construction Manager schedules and coordinates the Work of Contractor pursuant to Section 7.2 hereof.
- (l) Contractor - as defined in the first Recital of this Agreement.
- (m) Drawings - Project drawings comprising part of Exhibit [x].
- (n) Engineer **[include Name, Address, etc., as applicable]**.
- (o) Extra Work - any work in addition to the Work to be performed by Contractor pursuant to the Contract Documents.
- (p) Field Order - as defined in Section 9.3.
- (q) Final Acceptance - as defined in Section 8.7.
- (r) Final Requisition - as defined in Section 5.2.
- (s) Guarantor - as defined in Section 27.3.
- (t) 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.
- (u) Key Person/Personnel - as defined in Section 27.25.
- (v) Materialman - supplier of Materials.
- (w) Materials - all products, materials, fixtures, tools, equipment, apparatus, and furnishings intended to form a part of the Work.
- (x) Minority Business Enterprise or Minority Owned Business Enterprise or MBE - as defined in Article 26.
- (y) Minority or Minority Group Member - as defined in Article 26.
- (z) 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.
- (aa) Payment Bond - as defined in Section 13.3.
- (bb) Performance Bond - as defined in Section 13.3.
- (cc) Preceding Covered Date - as defined in Section 5.5.
- (dd) 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.
- (ee) Progress Schedule for the Work - as defined in Section 3.1(a).
- (ff) Project - as defined in the third Recital of this Agreement.
- (gg) Purchase Order - as defined in Section 10.1(e).
- (hh) Requisitions - as defined in Section 5.2.
- (ii) Samples - physical examples which illustrate Materials or workmanship and establish standards by which the Work will be judged.

- (jj) Site - as defined in the third Recital of this Agreement.
- (kk) Specifications - the specifications comprising part of Exhibit [x].
- (ll) Subcontract - an agreement between the Contractor and a Subcontractor (as defined in subsection (mm), below) for work on the Site.
- (mm) Subcontractor - a person, firm, partnership or corporation under contract with Contractor.
- (nn) Term - as defined in Section 3.1(i).
- (oo) Trade Payment Breakdown - as defined in Section 5.3.
- (pp) Women's Business Enterprise or Women Owned Business Enterprise or WBE - as defined in Article 26.
- (qq) Work - as defined in Section 2.1.
- (rr) 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 A (the "**Work**") 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 - SCOPE OF WORK (as applicable)
 - (2) EXHIBIT B – DRAWINGS (as applicable)
 - (3) EXHIBIT C – SPECIFICATIONS (as applicable)
 - (4) EXHIBIT D - MONTHLY UTILIZATION COMPLIANCE REPORTS (as applicable)
 - (5) EXHIBIT E - PROMPT PAYMENT POLICY (as applicable)
 - (6) EXHIBIT F - INCIDENT REPORT FORM (as applicable)
- (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 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 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/or 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.

(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 that 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 its 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 Completion Date, as more fully set forth in subsection (h) below; this Agreement shall terminate by [date] (the "**Agreement Termination Date**") (the period between the date of commencement of the Work and the Agreement Termination Date, the "**Term**").

(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 (the "**Notice to Proceed**"), 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.] **[delete if no liquidated damages]**

(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,] **[delete if no liquidated damages]** 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 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] **[delete if no liquidated damages]** any excess cost if BPCA determines that Contractor is without fault and that the delay in completion of the Work is due to:

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

(2) an unanticipated 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) 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.

(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 shall 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.

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 that is causing or is threatening to cause such delay or disruption notify Construction Manager in writing of the effect of such condition upon the 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].

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 that have not been incorporated in the Work to date, 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.

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 (pursuant to BPCA's Prompt Payment Policy, a copy of which is attached hereto and made part hereof as Exhibit E) 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
- (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 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 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 this 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 that 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.

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, BPCA 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

During the Term, 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 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 that 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 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.

The delivery of a Certificate of Substantial Completion shall not terminate or alter Contractor's obligation under this Agreement to complete the Work as expeditiously as practicable 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 this Agreement, 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 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 BPCA to Contractor after execution of this Agreement, authorizing or requiring:

- (i) Extra Work,
- (ii) items that were erroneously deleted or omitted from the Work,
- (iii) items that 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) accepting an amount agreed upon by BPCA and Contractor;
- (2) applying the applicable unit prices and alternates where the Work involved is covered by unit prices in this Agreement;
- (3) 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) 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) adding to the Contract Price only the amount of the premium portion of overtime pay resulting from an acceleration of the Work; or
- (6) 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 that 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.

(c) No claim of Contractor under this clause shall be allowed unless Contractor has given the notice required in subsection (b) 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 the issuance of the 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 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. 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 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 certificates shall also include riders providing that violation of any of the terms of any policy shall not by itself invalidate such policy. Such policies and certificates should name as additional insureds BPCA, Battery Park City Parks Conservancy Corporation ("BPCPC"), the State of New York, Construction Manager, and Architect.

(d) All insurance required to be procured and maintained must be procured from insurance companies that 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 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 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.

Product and Completed Operations

(\$\$\$\$\$)

- (i) 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 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 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) Contractor shall secure, pay for, and maintain Property Insurance necessary for protection against the loss of owned, borrowed or rented equipment, tools and materials used in Contractor's performance of the Work. The requirement to secure and maintain such insurance is solely for the benefit of Contractor. Contractor's failure to secure such insurance or to maintain adequate levels of coverage shall not render BPCA or any other Additional Insureds, or their agents and employees, responsible for any such losses, and Owner, the other Additional Insureds, and their agents and employees shall have no such liability.
- (9) Valuable Papers Insurance insuring, for the benefit of Contractor and BPCA all plans, designs, drawings, specifications, and documents used under this Agreement by Contractor in a total amount of not less than [\$\$\$\$\$] Contractor may furnish full coverage under one policy, or may submit separate policies from any Subcontractor(s) for their proportionate shares of such coverage.
- (10) Comprehensive Crime/Employee Dishonesty Insurance in a reasonable amount or an amount which is customary in the applicable industry, trade or profession.
- (11) If the Work involves the removal, repair, installation or testing of underground petroleum storage tanks, or petroleum remediation operations, or the performance of work or services related to excavation, loading, transporting or unloading of hazardous or contaminated materials, Contractor shall provide Contractors Professional Liability Insurance with a limit of [\$\$\$\$\$]. Coverage shall provide and encompass the following:
 - (i) Contractor's negligent acts, errors or omissions in rendering or failing to render services of an engineering or consulting nature arising out of their environmental engineering or consulting.
 - (ii) Maximum self-insured retention of [\$\$\$\$\$], or an amount acceptable to BPCA.
- (12) Umbrella Liability Insurance [excess of general liability, automobile liability, Marine protection and indemnity, pollution liability, vessel pollution liability 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, BPCPC, 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, BPCPC, 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 TEN THOUSAND DOLLARS (\$10,000) and a deductible provision for flood and earthquake in the amount of TEN THOUSAND DOLLARS (\$10,000). BPCA recognizes that the deductible applicable to flood and earthquake may be greater than TEN THOUSAND DOLLARS (\$10,000) due to insurance market conditions and shall notify Contractor if such deductible is greater than TEN THOUSAND DOLLARS (\$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 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 has not already done so, furnish to BPCA, with the execution of this Agreement, to BPCA, a bond in the form acceptable to BPCA 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 acceptable to BPCA 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 that 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) 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) such work is Work required to be performed hereunder and not Extra Work, (y) such action or omission is proper, or (z) such 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(a).

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, including abandonment of the Work by Contractor, 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 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 BPCA 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.

(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.

(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; and
- (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 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 specifications 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 reproducibles, 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 the Work in a manner that 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 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 the: (i) jurisdiction of any court in which BPCA brings an action arising under this Agreement, (ii) the governmental nature of BPCA, or (iii) 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 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 that 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 shall not (1) constitute acceptance of space, systems, Materials or elements of the Work, (2) affect the start of any guaranty period, nor (3) affect the obligations of Contractor to complete the Work 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 that 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 that will become an integral component of the completed Project pursuant to this Agreement.

19.2 Certificates

Contractor shall obtain and cause Subcontractors and Materialmen to 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 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 any and all damage to any Work affected by or from such defects and all expenses necessary to remove, replace and repair such Work that 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 that 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 that 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 that 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.

21.3 Liability

Contractor shall hold BPCA, BPCPC, 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, BPCPC, 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, BPCPC, 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, BPCPC, 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 all:

- (1) United States patents and patents registered in any other foreign country;
- (2) proprietary knowledge, data and trade secrets; and
- (3) 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.

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] 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.

(b) if to Contractor:

[NAME], [COMPANY] located at [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] located at [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] located at [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 BPCA 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
BPCA 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 BPCA 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:

- (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 BPCA 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, 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 BPCA, 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 BPCA within seventy-two hours of notice from BPCA of the awarding of this contract to Contractor. If Contractor does not have an existing EEO policy statement, BPCA 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 of the State of New York, and all other City, 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.

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 BPCA, and such other persons as BPCA may invite, on a periodic basis as required by BPCA 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 BPCA 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 BPCA'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 BPCA's Diversity officer on a monthly basis and shall be in accordance with the following:

- (1) BPCA may require that Contractor submit Utilization Compliance Reports for the duration of this contract to BPCA 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 BPCA;
 - (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 during the remainder of their performance of the Work.

(h) Any failure by Contractor 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 twenty percent (20%) MBEs and/or WBEs 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 or WBE that acts merely as a conduit for goods manufactured or produced by a non-MBE or non-WBE, only that portion of the price paid for such materials that will accrue as profit to the MBE or WBE and/or the Fee received by the MBE or WBE shall be included;
- (2) if Contractor is a joint venture including one or more MBEs or WBEs as joint venturers -- the Contract Price multiplied by the percentage of the joint venture's profits (or losses) that are to accrue to the MBE and WBE joint venturer(s) under the joint venture agreement; and
- (3) if an MBE or WBE is Contractor or where Contractor is a joint venture consisting entirely of MBEs or WBEs -- the Contract Price.

(c) Monthly 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 BPCA 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 BPCA'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 BPCA 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 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 that 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 BPCA with Monthly MBE/WBE and Workforce Utilization Reports, by the last calendar day of each month, in the form of Exhibit [D] 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 MBE/WBE participation goals set forth herein or any other requirements set forth in this Article 26, such finding constitutes a breach of contract and BPCA may withhold payment from the Contractor as liquidated damages.

(b) Such liquidated damages shall be calculated based on the actual cost incurred by BPCA related to BPCA'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 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. Contractor shall also complete and submit to BPCA the “Incident Report Form” attached hereto and made a part hereof as Exhibit F within 48 hours of the occurrence of any such injury.

(c) Contractor alone shall be responsible for the safety, efficiency and adequacy of contractor’s work, plant, appliances and methods, and for any damage that may result from the failure, or the improper construction, maintenance, or operation of such work, plant, appliances

and methods.

27.7 Waiver of Immunity Clause

Contractor hereby agrees to the provisions of New York Public Authorities Law Section 2875, which require that 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. Upon the refusal of any person to comply with such provisions:

(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 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.

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.

(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.

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 interest 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 Agreement, 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 Agreement 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, 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 that 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 Agreement.

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.

27.29. Counterparts

This Agreement may be executed in any number of counterparts, all of which taken together shall constitute one instrument, but the Agreement shall not be deemed effective unless signed by all parties.

27.30. Section Headings

Section headings contained in this Agreement are for convenience only and shall not be considered for any purpose in governing, limiting, modifying, construing or affecting the provisions of this Agreement and shall not otherwise be given legal effect.

27.31. Subordination of Terms in the Exhibits

In the event of a conflict of terms, the terms stated in Sections 1-27 herein, shall take precedence over and shall prevail over any printed, typed, or handwritten terms located in the Exhibits.

SIGNATURE PAGE FOLLOWS

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
Contacts Administrator

Dear Mr. LaMancusa:

The undersigned (the "Proposer") hereby proposes to provide all specified work necessary to perform the work for the **Tribeca Bridge Painting** project.

Base Proposal

A total Lump sum amount of \$_____ (_____ Dollars and _____ Cents) to perform all work associated with the Project and as described in Exhibit A ("Scope of Work) of the Authority's Request for Proposals ("RFP").

Schedule of Values and Labor Rates

1. The Proposer has submitted with its Proposal: a unit cost schedule for all associate work, according to the Schedule of Values for the Scope of Work in Exhibit A of the RFP.
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
Form of Labor Rates
(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:

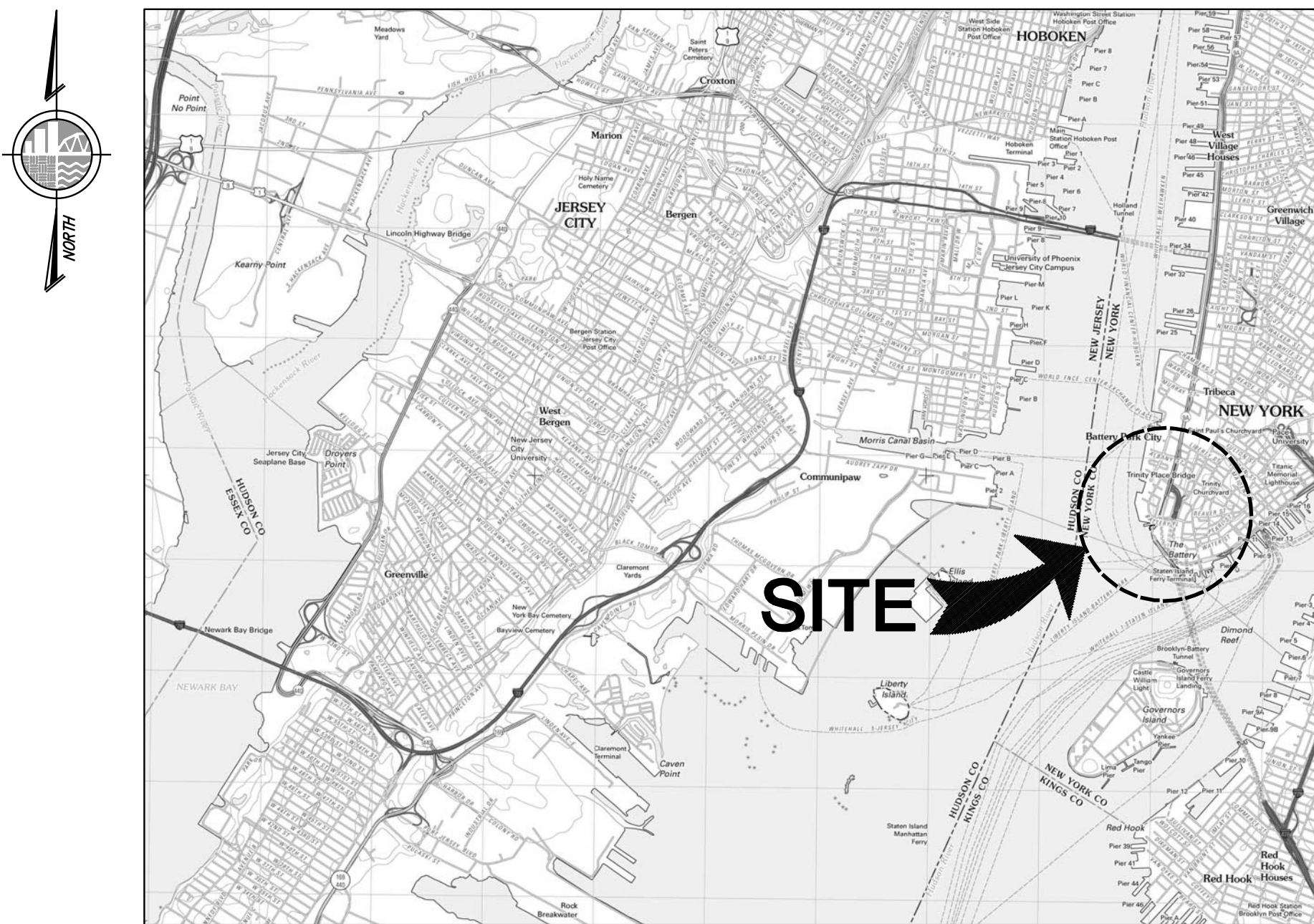
| <u>CRAFT</u> | <u>CLASSIFICATION</u> | <u>HOURLY RATES</u> | <u>OVERTIME</u> |
|--|-----------------------|---------------------|-----------------|
| <u>LABORER</u> <u>CONCRETE</u> | _____ | _____ | _____ |
| <u>CARPENTER</u> | _____ | _____ | _____ |
| <u>IRON WORKER</u> | _____ | _____ | _____ |
| <u>LABORER</u> | _____ | _____ | _____ |
| <u>LABORERS - LESS</u> <u>SKILLED</u> | _____ | _____ | _____ |
| <u>OPERATING</u> <u>ENGINEER</u> | _____ | _____ | _____ |
| <u>FIELD SUPERVISOR</u> | _____ | _____ | _____ |
| <u>FOREMAN</u> | _____ | _____ | _____ |
| <u>TEAMSTER</u> | _____ | _____ | _____ |
| <u>ELECTRICIAN</u> | _____ | _____ | _____ |
| <u>PLUMBER</u> | _____ | _____ | _____ |

EXHIBIT F
Drawings & Specifications

BATTERY PARK CITY AUTHORITY TRIBECA BRIDGE PAINTING AND REPAIRS

BATTERY PARK CITY NEW YORK,
NEW YORK
AUGUST 24, 2015

PREPARED BY:



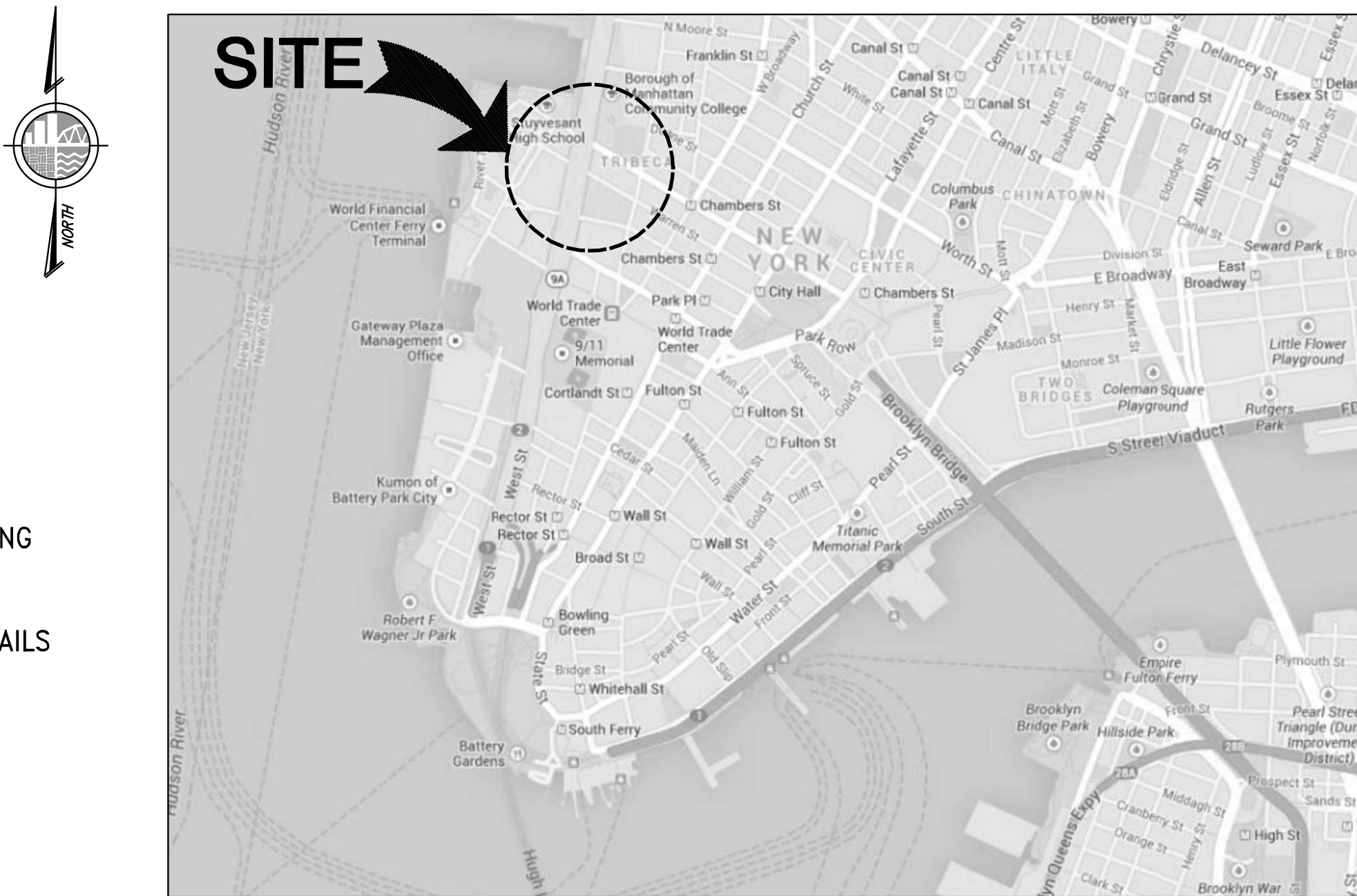
LOCATION PLAN
N.T.S.

DRAWING NO.

T-100
S-110
S-120
S-130
S-131
S-140
S-141
S-150
S-160
S-170

SHEET TITLE

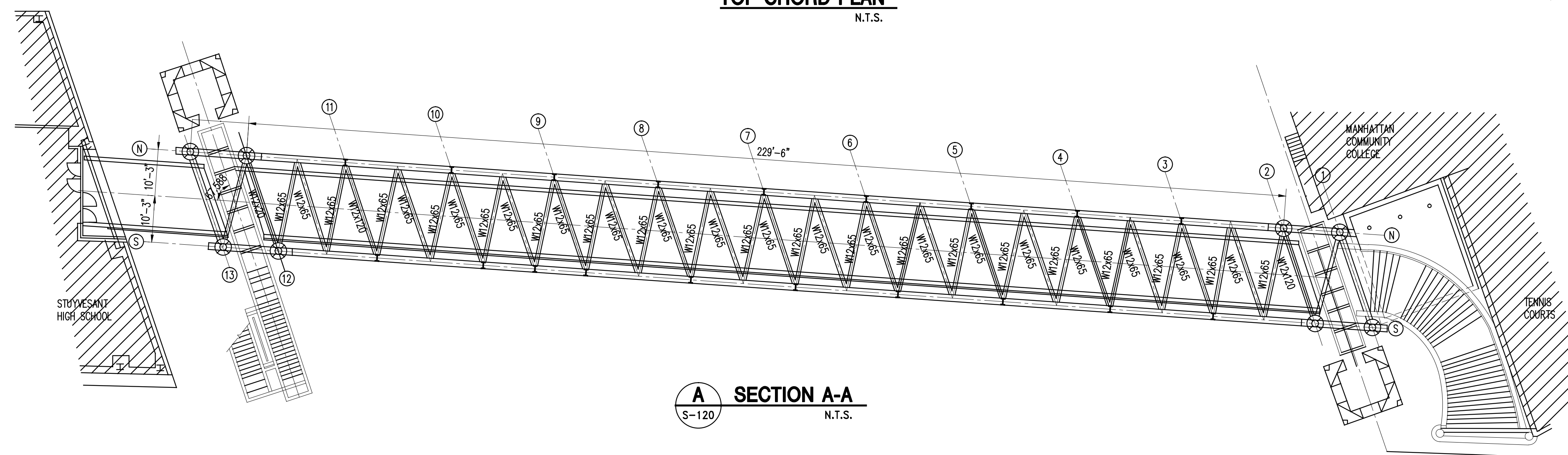
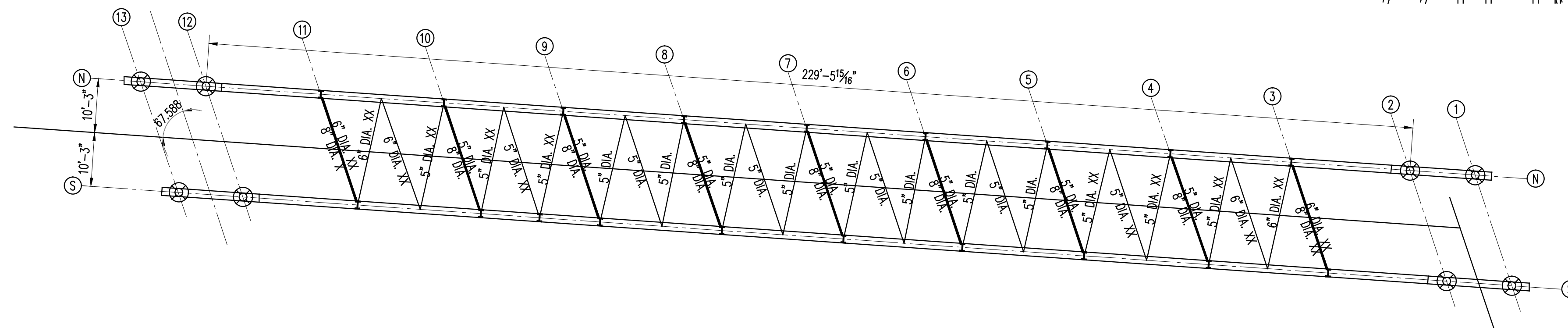
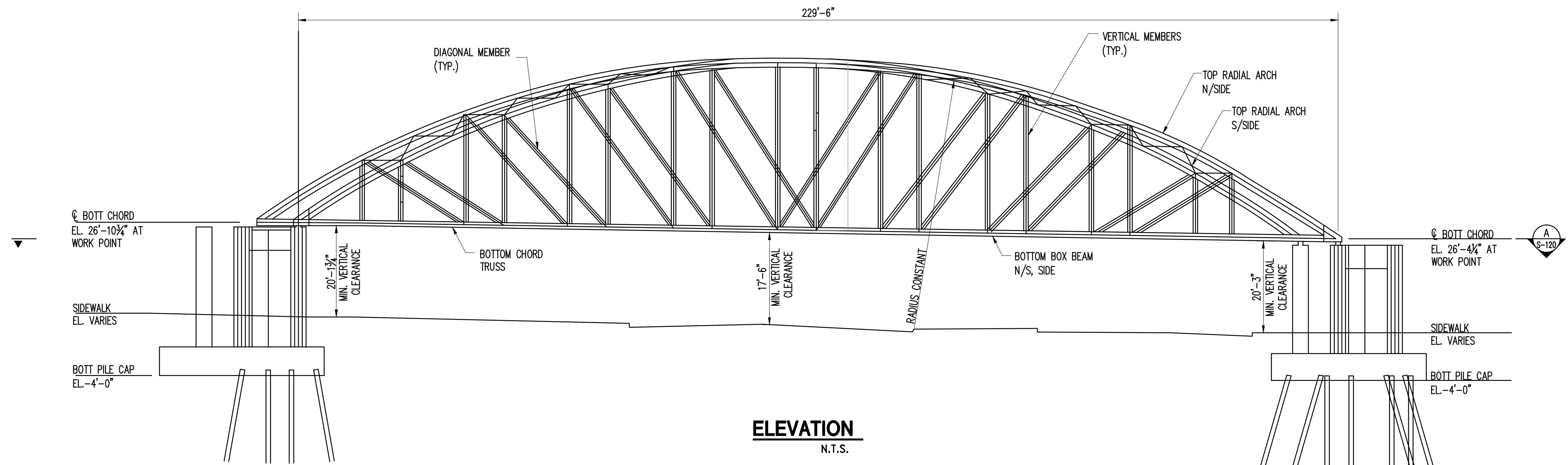
COVER SHEET
NOTES, ABBREVIATIONS & DRAWING LIST
PLAN AND ELEVATIONS/SECTIONS
TYPICAL PEELING AND CORROSION PHOTOS
TYPICAL PEELING AND CORROSION PHOTOS
MEMBERS AND QUANTITIES FOR BLASTING AND PAINTING
MEMBERS AND QUANTITIES FOR OVERCOAT PAINTING
CONTRACTOR'S SUGGESTED STAGING/STORAGE AREA
SUGGESTED CONCEPTUAL WORK ENCLOSURE AND DETAILS
BIRD BARRIER DETAILS



VICINITY MAP
N.T.S.

NOT FOR CONSTRUCTION
FOR BID PURPOSES

| | |
|-------------|-----------|
| SHEET TITLE | |
| NOTES | |
| PROJECT NO. | 140950.04 |
| SCALE | AS NOTED |
| DATE | 08/24/15 |
| DRAWN BY | RRR |
| CHECKED BY | RJM |
| DRAWING NO. | |
| S-110 | |
| 2 | OF 10 |
| SHTS | |



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McLaren
ENGINEERING GROUP

applied ingenuity

M. G. McLAREN, P.C.
100 Strake Hill Road, West Nyack, NY 10994
T. (845) 353-6400 F. (845) 353-6609 www.mgmlaren.com

PROJECT
BATTERY PARK
CITY AUTHORITY
TRIBECA BRIDGE
PAINTING AND REPAIR
NEW YORK, NEW YORK

PLAN AND ELEVATIONS

| | |
|-------------|-----------|
| PROJECT NO. | 140950.04 |
| SCALE | N.T.S. |
| DATE | 08/24/15 |
| DRAWN BY | RRR |
| CHECKED BY | RJM |

AWING NO.

S-120

3 OF 10 SHTS

FILE NAME: P:\Proj140\140950.04\10_Dwgs\CADD\S-120.dwg PLOT TIME: Thu, 25 Feb 2016 - 4:47pm LAST SAVE: Thu, 13 Aug 2015 - 4:48pm BY: cwebber

WARNING - IT IS A VIOLATION OF NEW YORK STATE EDUCATIONAL LAW, SECTION 7209.2, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW, SECTION 7209.2

FILE NAME: P:\Proj140\140950.04\10_Dwgs\CADD\S-130.dwg PLOT TIME: Thu, 25 Feb 2016 - 4:17pm LAST SAVE: Mon, 17 Aug 2015 - 3:31pm BY: cwebber



WEST SIDE STAIRWELL



UNDERSIDE OF STAIRWELL SEALING TYPICAL CORROSION AND SECTION LOSS REVEALING



TYPICAL PEELING AND CORROSION AT PLATE GIRDERS



TYPICAL PEELING AND CORROSION AT ELEVATOR STRUCTURES

NOT FOR CONSTRUCTION
FOR BID PURPOSES

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| PROJECT NO. | | 140950.04 | |
| SCALE | | AS NOTED | |
| DATE | | 08/24/15 | |
| DRAWN BY | | RRR | |
| CHECKED BY | | RJM | |
| DRAWING NO. | | S-130 | |
| 4 | | OF 10 | |
| SHTS | | | |

McLaren
ENGINEERING GROUP
applied ingenuity
M. G. McLAREN, P.E.
100 Snake Hill Road, West Nyack, NY 10994
T: (945) 353-5400 F: (945) 353-5559 www.mclaren.com

**BATTERY PARK
CITY AUTHORITY
TRIBECA BRIDGE
PAINTING AND REPAIR**
NEW YORK, NEW YORK

**TYPICAL PEELING AND
CORROSION PHOTOS**

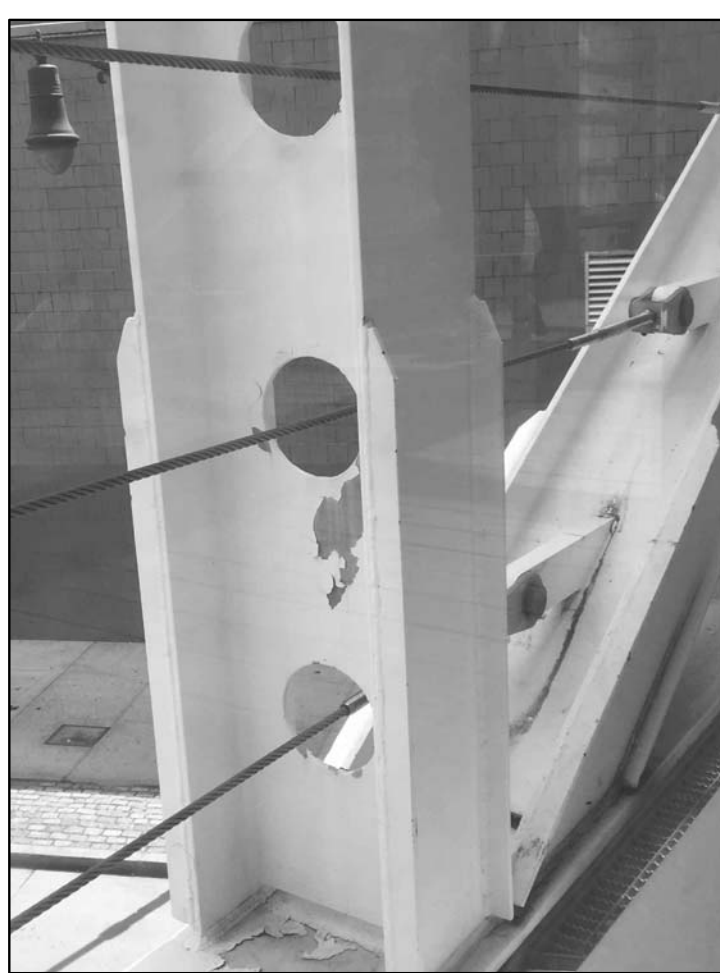
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TYPICAL PEELING AND CORROSION OF BRIDGE RADIAL AND TRUSS MEMBERS



TYPICAL PEELING AND CORROSION OF BRIDGE RADIAL AND TRUSS MEMBERS



TYPICAL PEELING AND CORROSION OF BRIDGE TRUSS MEMBERS

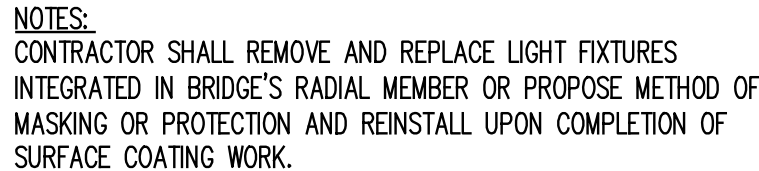


**TYPICAL PEELING AND CORROSION OF EMBEDDED STEEL CHANNELS
IN EAST AND WEST STAIRWELL LANDING AND ADJACENT BUILDINGS**



TYPICAL CONDITION OF UNDERSIDE OF BRIDGE DECKING

NOT FOR CONSTRUCTION
FOR BID PURPOSES



NOTES:

1. WIRE MESH ON WEST LANDING SHALL BE REMOVED AND STORED PRIOR TO BLASTING AND SURFACE COATING AND REINSTALLED UPON COMPLETION OF AFOREMENTIONED WORK.
2. CONTRACTOR SHALL REMOVE AND REPLACE LIGHT FIXTURES INTEGRATED IN WEST LANDING AND ADJACENT BUILDING OR PROPOSE METHOD OF MASKING OR PROTECTION AND REINSTALL UPON COMPLETION OF SURFACE COATING WORK.
3. EMBEDDED STEEL CHANNELS, STEEL DOORS, AND DOOR JAMBS IN ADJACENT BUILDING SHALL RECEIVE SURFACE PREPARATION AND PAINTING.

TOTAL = 4,145 ± $\triangle 1$



NOTE:

1. CONTRACTOR SHALL REMOVE AND REPLACE LIGHT FIXTURES INTEGRATED IN EAST LANDING OR PROPOSE METHOD OF MASKING OR PROTECTION AND REINSTALL UPON COMPLETION OF SURFACE COATING WORK.
2. EMBEDDED STEEL CHANNELS, STEEL DOORS, AND DOOR JAMBS IN ADJACENT BUILDING SHALL RECEIVE SURFACE PREPARATION AND PAINTING.

PLATE GIRDER BETWEEN CONCRETE COLUMNS-EAST AND WEST SIDE



| | |
|-------|--------|
| TOTAL | 11,341 |
|-------|--------|

| NO. | DATE | REVISION | BY |
|-----|----------|---------------|-----|
| 1 | 1/7/2015 | BID DOCUMENTS | RJM |
| | | | |
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| | | | |
| | | | |



PROJECT

**BATTERY PARK
CITY AUTHORITY
TRIBECA BRIDGE
PAINTING AND REPAIR**
NEW YORK, NEW YORK

SHEET TITLE

MEMBERS AND
QUANTITIES FOR
BLASTING AND PAINTING

| | |
|-------------|-----------|
| PROJECT NO. | 140950.04 |
|-------------|-----------|

SCALE N.T.S.

| | |
|------|----------|
| DATE | 08/24/15 |
|------|----------|

DRAWN BY RRR

DRAWING NO.

S-140

6 OF 10 SHTS

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WARNING - IT IS A VIOLATION OF NEW YORK STATE EDUCATIONAL LAW, SECTION 7209.2, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW, SECTION 7209.2



1. CONTRACTOR SHALL PROPOSE METHOD OF MASKING/PROTECTING LIGHT FIXTURES EMBEDDED IN BRIDGE AREA.

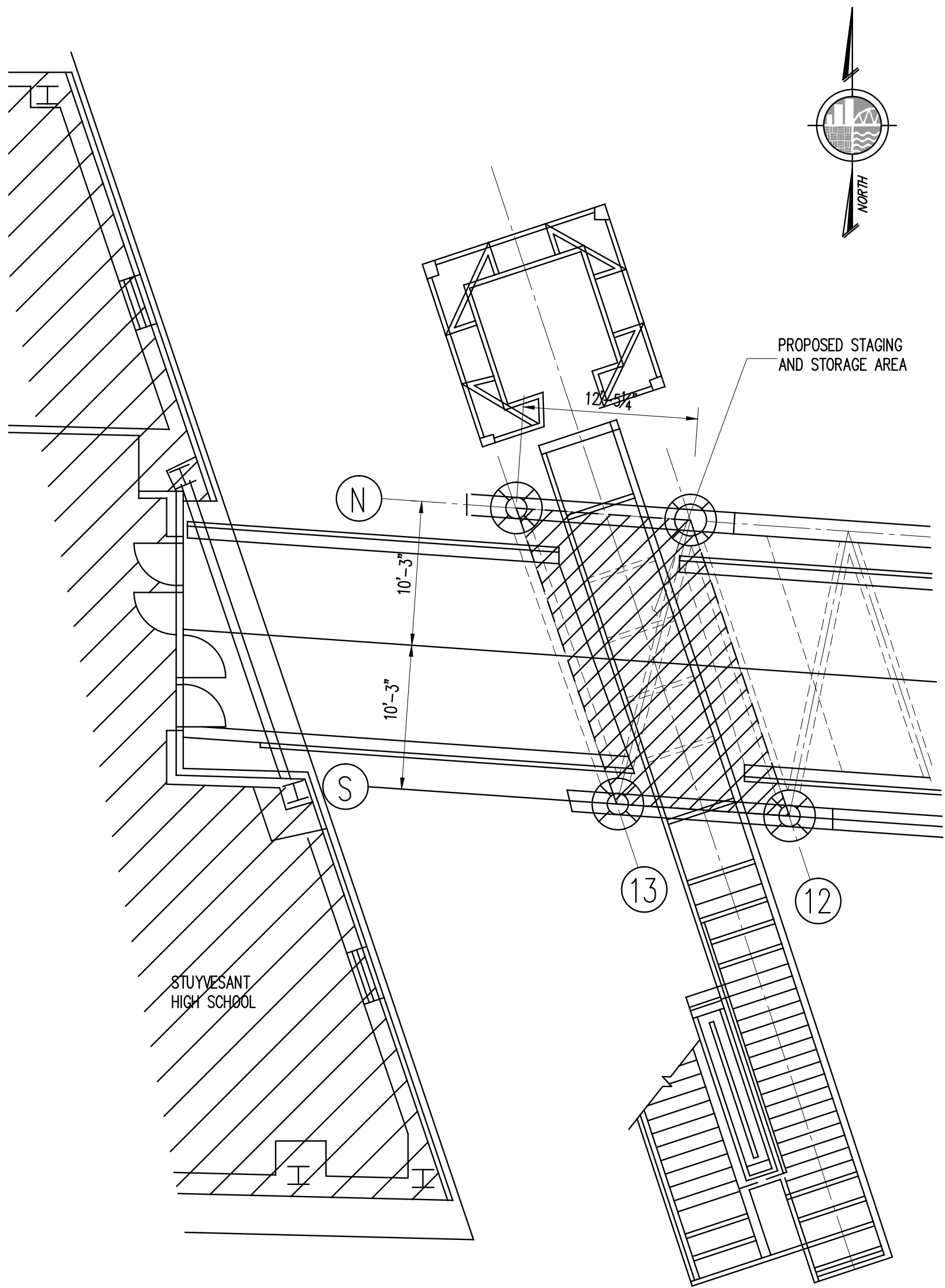


| | |
|---|-----------------|
| QUANTITIES FOR UNDERSIDE OF BRIDGE = | 4,646± SF |
| ADD 30% FOR MISC. METAL PAINT & WASTAGE = | 1,394± SF |
| | <hr/> 6,040± SF |

1. ALL UTILITIES ON UNDERSIDE OF BRIDGE SHALL BE PROTECTED AND COVERED DURING CLEANING OPERATIONS.

NOT FOR CONSTRUCTION
FOR BID PURPOSES

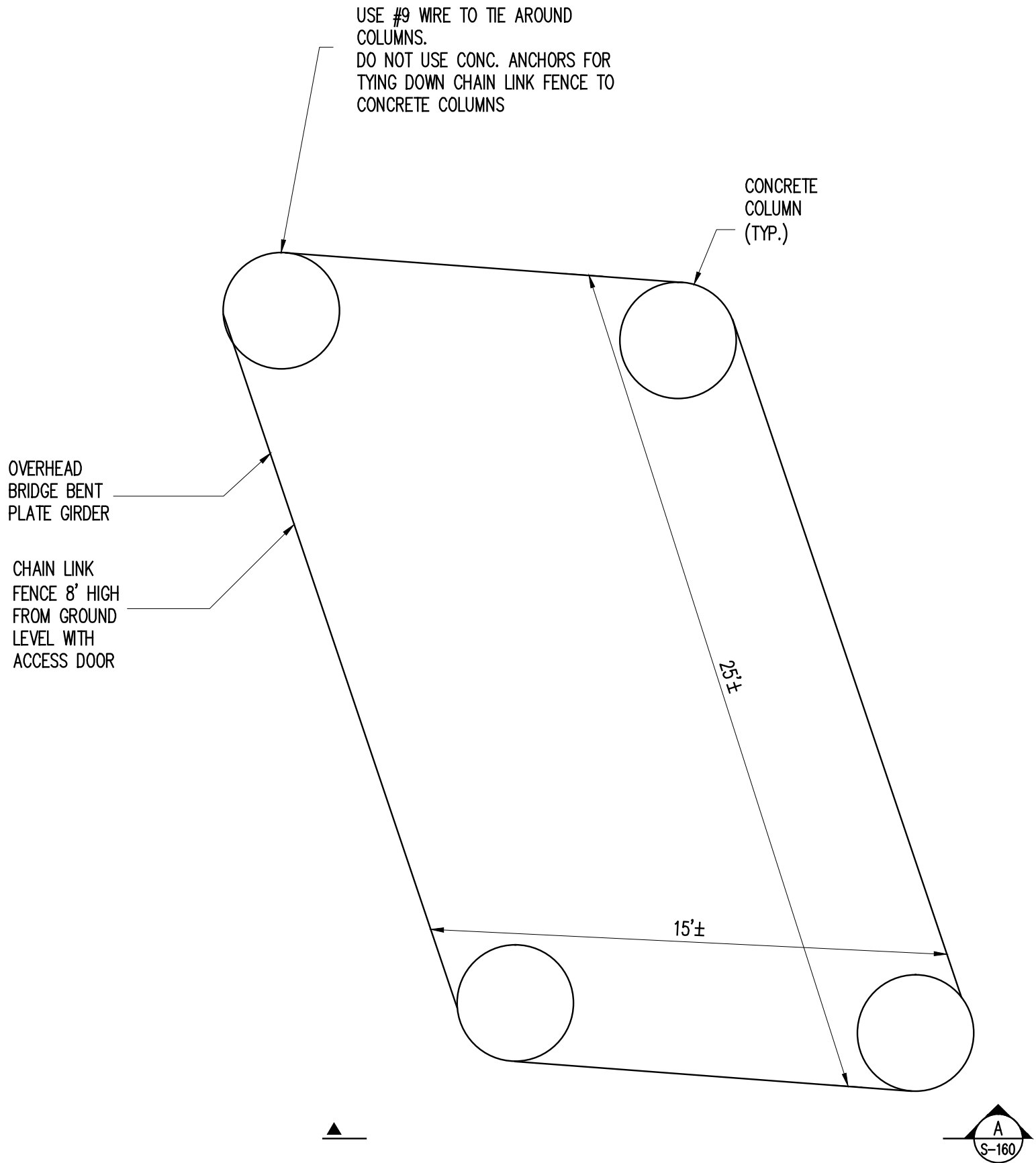
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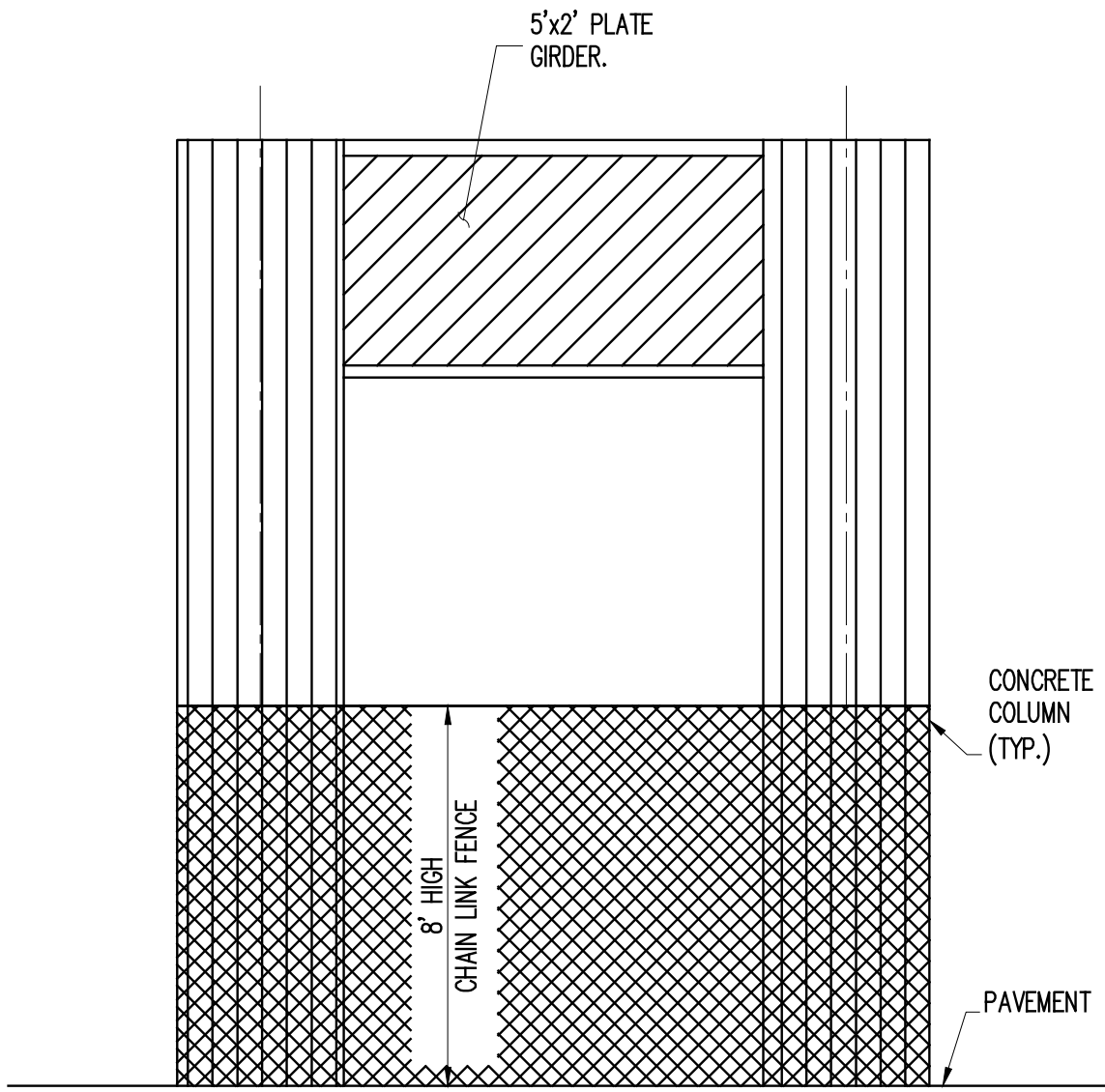
SUGGESTED STAGING & STORAGE AREA
N.T.S.

LEAGEND

 STAGING AREA



WEST SIDE BRIDGE COLUMNS
N.T.S.

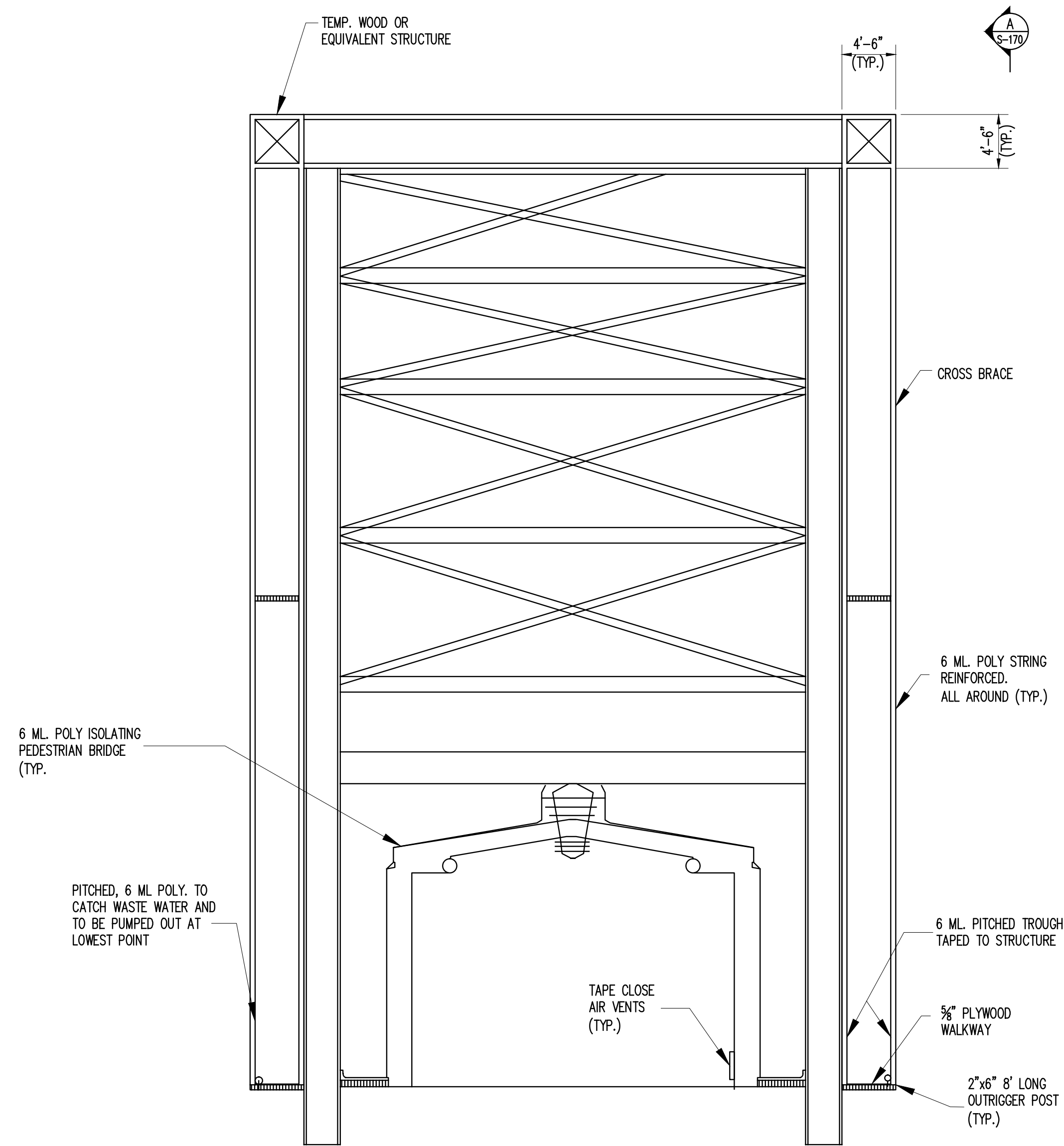


A SECTION A-A
S-150 N.T.S.

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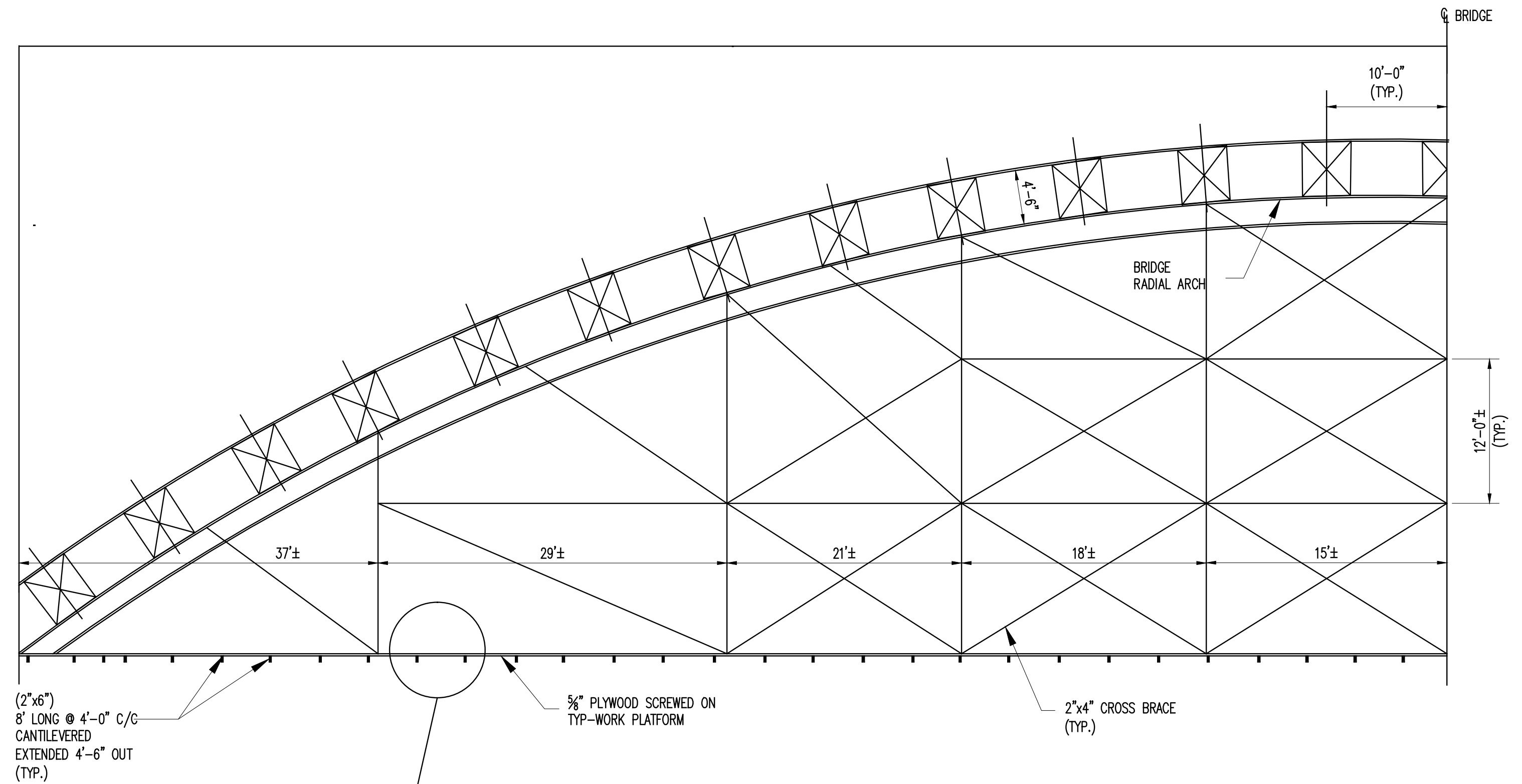
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|  | |
| PROJECT BATTERY PARK CITY AUTHORITY TRIBECA BRIDGE PAINTING AND REPAIR NEW YORK, NEW YORK | |
| SHEET TITLE CONTRACTOR'S SUGGESTED STAGING/STORAGE AREA | |
| PROJECT NO. 140950.04 SCALE N.T.S. DATE 08/24/15 DRAWN BY RRR CHECKED BY RJM | |
| DRAWING NO. S-150 8 OF 10 SHTS | |
| REVISION DATE NO. | |



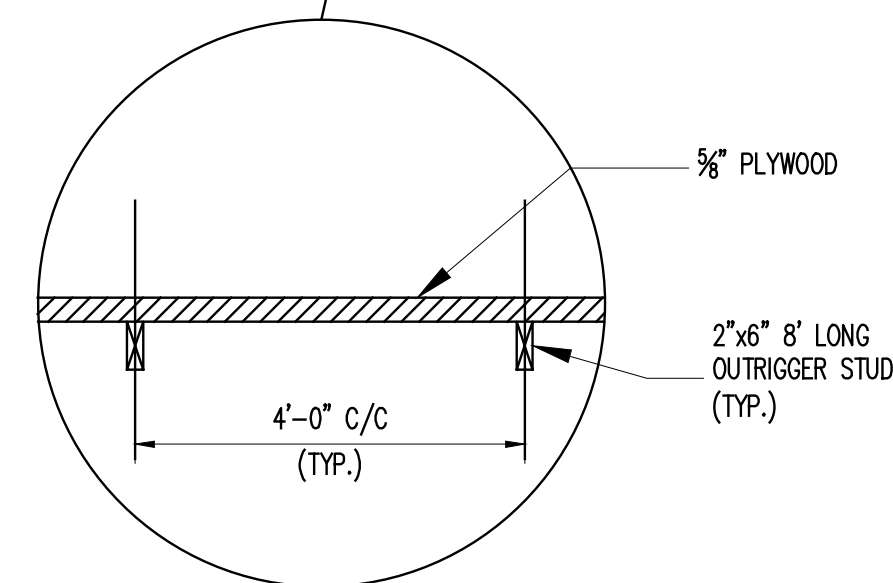
BRIDGE EAST END VIEW
CONCEPTUAL TEMP. WORK ENCLOSURE
N.T.S.

NOTES:

1. THE TEMPORARY WOODEN WALKWAY SHALL BE DESIGNED FOR A LIVE LOAD OF 100 PSF. PLUS WEIGHTS OF CONTRACTOR'S MATERIALS, TOOLS AND EQUIPMENT.
2. THE VERTICAL WOODEN FRAMING, AND ENCLOSURE SHALL BE DESIGNED TO WITHSTAND 100 MPH WIND LOAD, AND WILL BE TIGHTLY SEALED AGAINST ELEMENTS (RAIN, SNOW, ETC.)
3. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS PREPARED BY A LICENSED NEW YORK PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL
4. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE PROPOSED PLAN FOR PAINTING THE BRIDGE UNDERSIDE.



A PARTIAL SYMETRICAL SECTION A-A
S-160 N.T.S.



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FOR BID PURPOSES

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PROJECT
BATTERY PARK
CITY AUTHORITY
TRIBECA BRIDGE
PAINTING AND REPAIR
NEW YORK, NEW YORK

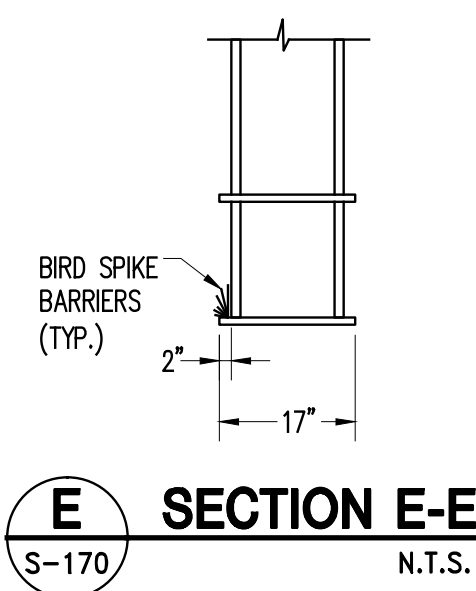
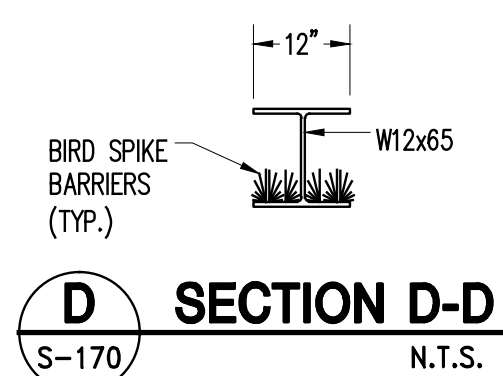
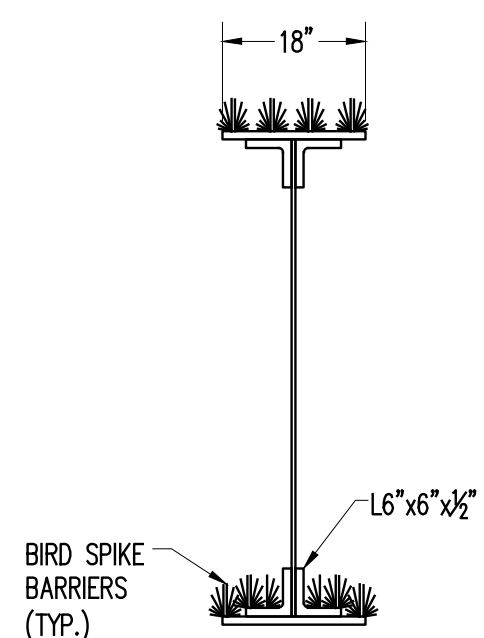
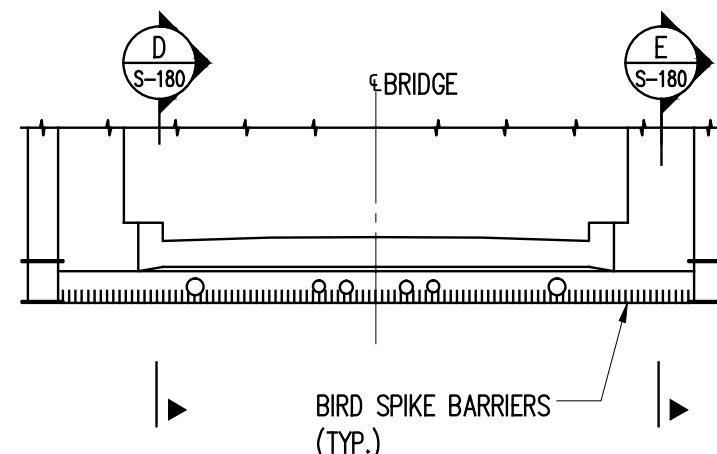
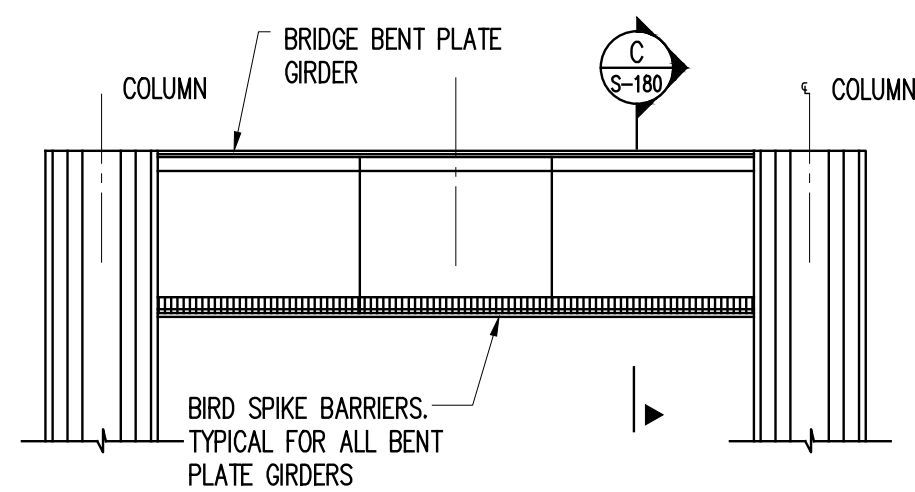
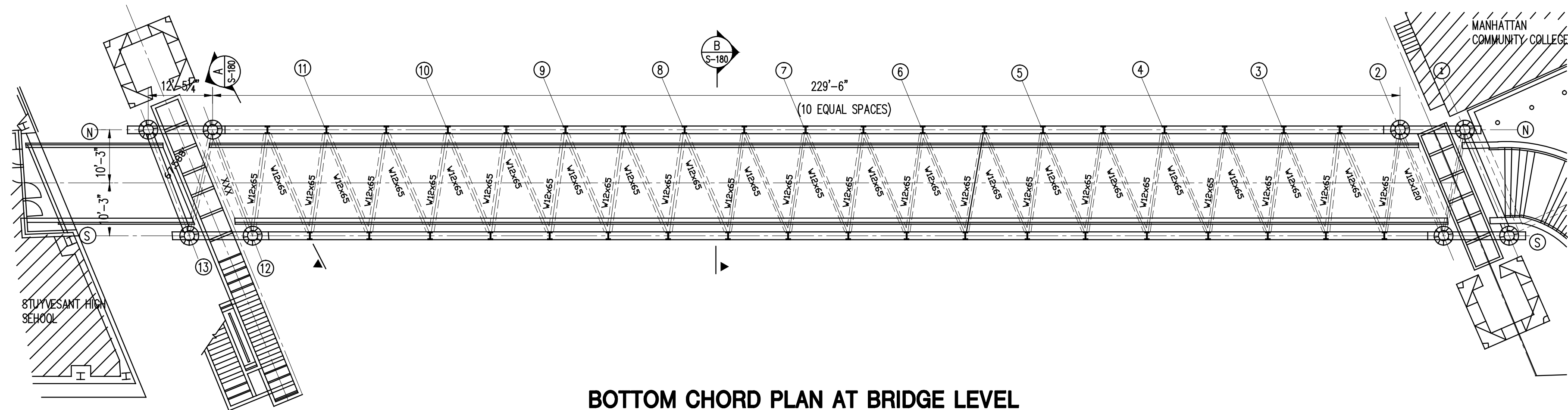
SUGGESTED CONCEPTUAL WORK ENCLOSURE AND DETAILS

| | |
|-------------|-----------|
| PROJECT NO. | 140950.04 |
| SCALE | N.T.S. |
| DATE | 08/24/15 |
| DRAWN BY | RRR |
| CHECKED BY | RJM |

AWING NO.

S-160

9 OF 10 SHOTS



- NOTES:

1. BIRD SPIKE BARRIERS SHALL BE NIXALITE PREMIUM BIRD STRIPS MODELS H AND S AS MANUFACTURED BY NIXALITE OF AMERICA INC. OR APPROVED EQUAL.
2. BIRD SPIKE BARRIERS ARE TO BE ATTACHED TO STEEL SURFACES BY AN ADHESIVE APPROVED BY THE MANUFACTURER OF THE BIRD SPIKES. BIRD STRIPS ARE TO BE PLACED IN ACCORDANCE WITH THE ADHESIVE MANUFACTURERS INSTALLATION INSTRUCTIONS.

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FOR BID PURPOSES

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McLaren
ENGINEERING GROUP
applied ingenuity

M. G. McLAREN, P.C.
100 Snake Hill Road, West Nyack, NY 10994
T. (845) 353-6400 F. (845) 353-6509 www.mgmcclaren.com

PROJECT
BATTERY PARK
CITY AUTHORITY
TRIBECA BRIDGE
PAINTING AND REPAIR
NEW YORK, NEW YORK

BIRD BARRIER DETAILS

| | |
|-------------|-----------|
| PROJECT NO. | 140950.04 |
| SCALE | N.T.S. |
| DATE | 08/24/15 |
| DRAWN BY | RRR |
| CHECKED BY | RJM |

AWING NO.
S-170
10 OF 10 SHTS

Project Specifications

**TECHNICAL SPECIFICATIONS
FOR**

**BATTERY PARK CITY AUTHORITY
TRIBECA BRIDGE REPAINTING & REPAIR
NEW YORK, NEW YORK**

Submitted to:

**HUGH L. CAREY BATTERY PARK
CITY AUTHORITY ONE WORLD
FINANCIAL CENTER NEW YORK,
NEW YORK 10281**

Submitted by:

**M. G. McLAREN, P.C.
Consulting Engineers
100 Snake Hill Road
West Nyack, New York**

SEPTEMBER 2015

Battery Park City Parks Authority
Tribeca Bridge Painting & Repair
New York, New York

INDEX OF SPECIFICATIONS

| | |
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| 013200 | Construction Progress Documentation |
| 013300 | Submittal Procedures |
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SECTION 00005

GENERAL CONDITIONS

AIA Document A201 – General Conditions of the Contract for Construction shall be referenced if not stated otherwise in Section 00710 or in the Contract Documents.

Notwithstanding anything in these specifications and drawings to the contrary, all provisions in the Battery Park City Authority contract hereforth shall supersede any conflicting provisions in these 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.

1.01 INTRODUCTION

- A. If, during the performance of the Work, the Contractor finds a conflict, error, or discrepancy in the Contract Documents, the Contractor shall report to the Construction Manager in writing immediately. Before proceeding with the Work affected thereby, the Contractor shall obtain a written interpretation or clarification from the Owner's Representative which shall be provided within 24 hours of notification from the Owner. Any work done before the Owner's Representative renders his/her decision is at the Contractor's sole risk and may be forced to remove / modify said work at no additional cost to the Owner.
- B. In the event of discrepancies in the Contract Documents, interpretations will be based upon the following priorities, in descending order of precedence:
 - 1. The Scope of Work, as defined in the Request for proposal.
 - 2. The Agreement including Regulatory Authorizations, and any properly executed Change-Orders thereto.
 - 3. The Drawings and Specifications.
 - 4. AIA Document A201-General Conditions of the Contract for Construction.

The Agreement, the provisions in the Contract and other Contract documents are intended to supplement and complement each other and shall, where possible, be thus interpreted. If, however, any provision of the Agreement irreconcilably conflicts with a provision of the Contract and the other Contract Documents, the provision imposing the greater duty or obligation on the Contractor shall govern. In the event of any dispute over the meaning or application, it shall be interpreted fairly and reasonably and neither more strongly for nor against either party to it.

In case of inconsistency between Drawings and Specifications, or within either document no clarified by Addendum, the better quality or greater quantity of work shall be provided in accordance with the Owner's interpretation.

- C. The Specification covers the repainting and repair of Tribeca Bridge at Battery Park City, Manhattan, NY, also referred to herein as the Project Site and is shown in the Contract Drawings.
- D. The Contractor guarantees that in the performance of work, he and every person in his direct or indirect employment (i.e. subcontractors) shall abide by and comply with all federal, state, and local laws including the Occupational Safety and Health Act and waterfront MARSEC USCG requirements.

- E. The term Owner, as used throughout the Contract Documents, designates Battery Park City Authority (BPCA) as the Owner, or its duly authorized representative.
- F. The term Owner's Representative, as used throughout these Specifications, indicates the Owner's authorized representative for a particular activity. The term includes Construction Manager, Engineer-Of-Record, and/or Special Inspector.
- G. It is the responsibility of the Construction Manager to delegate responsibility for particular activities.
- H. The term Engineer-Of-Record or Engineer as used throughout the Contract Documents, designates McLaren Engineering Group (McLaren).
- I. All correspondence between the Contractor and Engineer of Record shall be directed through the Construction Manager.
- J. The Work shall commence in accordance with the Contractor's accepted schedule. If, in the opinion of the Owner, the Contractor has not mobilized sufficient plant or material and/or if the Contractor does not demonstrate that sufficient work is underway according to the accepted schedule, the Owner reserves the right to terminate the Contract.
- K. In the event of termination of the Contract pursuant to the conditions set forth herein, such termination shall not act so as to relieve the Contractor from liability for any damages sustained by the Owner as a result of any breach by the Contractor of the terms of the Contract.
- L. At the completion of each work day the area around Tribeca Bridge must be clear of all construction equipment, materials and debris. The Contractor shall coordinate with the Construction Manager regarding equipment and material lay down area.
- M. Definitions
 - 1. Work: Material, equipment, labor, and services required for Contractor to fulfill his/her obligations of project or the part of the project considered.
 - 2. Project Site: Tribeca Bridge, New York, NY 10280.
 - 3. Provide: Furnish and install; provide in place.
 - 4. Furnish: Furnish only, not including installation.
 - 5. Install: Furnish and Install in place materials or structures. (Installation of materials furnished by others will be specifically identified).
 - 6. Shall: Mandatory requirement (understood to be applicable whether or not "shall" is used in the sentence structure): omission of "shall" does not make the Specification or Contract Drawing non-mandatory.
 - 7. Contract Sum: This shall be read as the Total Base Proposal amount and will be adjusted based on actual quantities of completed Work, including Owner-accepted Alternatives and Unit Price as

included in the Form of Proposal.

8. Day: Contract "day" shall be as defined in the BPCA master contract.

1.02 DESCRIPTION OF WORK

The Work shall include, but not be limited to:

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.

- A. Mobilization to and demobilization from the site.
- B. Furnish, installation and maintenance of environmental controls and safety measures.
- C. Furnish, installation and maintenance of temporary works.
- D. Cleaning, demolition and authorized disposal of components associated with repairs.
- E. All repairs shown in the Contract Drawings.
- F. Providing coordination with the Construction Manager for securing testing services and test results confirming accordance with Contract Documents for Engineer of Record approval.
- G. Providing submittals.
- H. Attendance of authorized representative at project meetings.
- I. Coordination with Construction Manager and/or Engineer of Record for review of Work.
- J. Providing bi-weekly schedule of anticipated work.
- K. Providing daily construction reports.
- L. Providing detailed outline of Proposer's QA/QC protocol.

1.03 GENERAL SCOPE OF WORK

Schedule

Unless otherwise stated in Section 01330, the following submittal schedule of all shop drawings, etc., for review by the Construction Manager and Engineer of Record shall be as follows:

- 1. Contractor's Submittal

Certain critical items are to be submitted by the Contractor within time frames listed in these Specifications. Unless specifically noted as such, the Contractor shall be responsible for the timely submittal of all required items, taking into account the Owner's Representative's review period as outlined herein, in order to maintain satisfactory progress of the Work.

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.

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 additional shifts, hours and weekends at no additional cost to the Owner, in order to ensure substantial completion no later than project closeout date. The project milestone dates are as follows:

- a. Contractor to complete Shop Drawings: February, 2016
- b. Construction Start: April 1, 2016
- c. Substantial Completion: May 31, 2016
- d. Punch List Walk-through: June, 2016
- e. Final Inspection of Punch List: June 2016

Contractor shall be required to submit an original certificate of insurance to the Construction Manager one week prior to commencement of contracted work in accordance with the Owner's contract.

2. Owner's Representative Review and Comments

Within five (5) days after receipt of Contractor's submittal.

The Work shall be performed in a general sequence developed by the Contractor and submitted to the Construction Manager for review, in accordance with the requirements of the Contract. The Contractor is solely responsible for the means and methods of construction and for the sequences and procedures to be used.

The Contractor shall furnish and coordinate all plant, labor, supervision, materials, equipment and appliances for all demolition and/or construction work in connection with the demolition and/or construction of the marine facilities.

The Contractor acknowledges and is aware that the area is occupied by others and that the site will not be fully closed from public access. All material delivery and operations associated with the Work shall be coordinated with other activities at the site in such a manner as to minimize the impedance on the site's tenants and the public, while maximizing the cost effectiveness and time of the Work. Coordination of equipment mobilization, construction, deliveries, etc. must be made with the Construction Manager.

1.04 EXAMINATION OF EXISTING CONDITIONS

Before submitting a proposal, it is a requirement of this Contract that each proposer visit the site to determine the conditions under which the Work is to be done. Such examination shall include, but not be limited to:

- A. Structural detail of the existing structures and related facilities.

- B. Various on-site utilities and structures not within the Scope of this Contract, but that may impact the execution of the Work. These will remain fully operational throughout the construction period.
- C. The layout and structural and finish condition of the existing structures.
- D. Access space, possible work areas, and load restrictions.

1.05 LIST OF CONTRACT DRAWINGS

The Contract Drawings which form part of these Specifications are listed in Section 08851.

1.06 CONTRACTOR-FURNISHED MATERIALS

- A. The Contractor shall furnish all materials for installation in the completed Work as specified hereinafter.
- B. The Contractor shall handle these materials as they are delivered to the site or off-site work areas, and shall store them in a designated storage area by the Construction Manager. If sufficient room is not available, the Contractor shall store materials at his own cost.
- C. The Contractor-furnished material is subject to review by the Owner or Owner's Representative at the plant of manufacture at the Owner's option. Review by the Owner or Owner's Representative is not to be construed as technical in nature and in no way shall be deemed to relieve the Contractor from his/her obligation herein to insure the quality and integrity of the materials supplied by the Contractor for this project.
- D. Project material furnished by the Contractor shall conform to the requirements of the Specifications stated hereinafter. The Contractor shall, as part of the Contract fee, also furnish all consumable materials necessary to complete the Work, such as, but not limited to, welding electrodes, safety equipment, etc.

1.08 LAYOUT

- A. The Contractor shall be solely responsible for the accuracy of all locations, dimensions, and levels and no plea as to instructions or order received from any other sources other than information contained on Contract Drawings, Specifications or in written orders of the Owner or Construction Manager shall justify departure from the dimensions and elevations required by the Contract Drawings.
- B. The Contractor shall take his own measurements at the site, verifying same with the Contract Drawings and existing facilities, and will be held responsible for the proper fit and alignment of completed work in position.

1.09 GUARANTEE

- A. The Contractor shall guarantee to the Owner all materials and workmanship against original defects, or against injury from proper and usual wear when used for the purpose intended, for twelve (12) months after date of final payment certifications, and shall maintain all items in perfect condition during the period of guarantee.

- B. Defects appearing during the period of guarantee shall be made good by the Contractor at his expense upon written demand of the Owner, it being required that all work shall be in perfect condition when the period of guarantee shall have elapsed. In the event of default by the Contractor, the Company shall have the right to make good any and all defects and bill the Contractor as per the contract for administration fees. The Owner shall provide notice of correction along with time frame for correction prior to taking action regarding guarantee bonds or penalties.
- C. 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.

1.10 PARKING, STORAGE AND ACCESS TO WORK AREA

- A. The Contractor shall coordinate with the Construction Manager available parking, storage and access to the work area. In no event shall these areas interrupt or disturb the Owner's operations. The Contractor shall protect the stored equipment and material from the elements in such a manner as to be satisfactory to the manufacturer of the equipment or material and the Owner.
- B. 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.
- C. 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. That includes the additional cost for inspections by the engineer.
- D. 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.
- E. 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, unless approved in the Contractor's Staging Plan.
- F. Contractor shall not use the site for staging of construction materials or equipment, unless approved in the Contractor's Staging Plan.
- G. Proposer shall not store any material or equipment on site unless directed by the Owner/Owner's Representative.
- H. Proposer shall not use the site for staging of installation materials or equipment except as approved by the Owner.

1.11 SUBCONTRACTORS

- A. A list of Subcontractors, pre-qualified by the Contractor, shall be submitted to the Owner by the Contractor with his proposal. The Owner has the ultimate right to accept or reject any one or more of the subcontractors, and must do so in writing after receipt of said list from the Contractor. No deviations shall be allowed from this list without written approval of the Owner. Valid insurance certificates for subcontractors shall be submitted by the Contractor to

the Owner with his proposal.

- B. The Owner shall receive, upon completion of this Contract in full from the Contractor, any reduction in the Subcontractor's price, which may result from a reduced scope of the Contractor's work.

1.12 SITE CONDITIONS

- A. At the Contractor's expense, the Contractor's working areas shall be cleaned by him on a day-to-day basis, with all rubbish removed from the site and all work areas cleaned at the end of each day. At final completion of all work, the Contractor shall leave the entire premises, within the site of his operations, clean and free from the rubbish resulting from his construction operations.
- B. 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.
- C. 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.
- D. Contractor shall be responsible for ice, snow and frost removal at site during construction in order to accommodate performance of work.
- E. 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.

1.13 COMPENSATION

- A. Compensation shall be based upon the Owner-accepted Schedule of Values and authorized Change Orders thereto.
- B. 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.
- C. Requisitions for this project shall be due to the Construction Manager by the 5th of every month as a "pencil copy". The final signed and sealed requisition is then due to the owner by the 15th of every month in the format specified in the Owner's contract.

1.14 UTILITIES

The Contractor is responsible to provide and maintain any and all utilities he deems necessary to affect the Work. Should existing site utilities be made available for the Contractor's use by the Owner, it is the responsibility of the Proposer to verify the suitability of existing site utilities for their needs. The Contractor may use such provided utilities at his own risk. Damages shall be the sole responsibility of the Contractor and repairs shall be made immediately at no additional cost to the Owner.

1.15 FIRE PROTECTION

The Contractor shall provide and maintain at his expense all required fire protection systems and devices as necessary to safely perform the Work in accord with the applicable regulations. They shall be operational throughout the period of construction. The Contractor shall also maintain sufficient means for fire and emergency rescue vehicles to access the site.

1.16 COMPLIANCE WITH CONTRACT

The Owner shall have the right to withhold without penalty any payment described above, or sections referenced herein, for completed work should the Contractor fail to meet any obligations or requirements of the Contract, cause damage to the existing site, structures or facilities, or violate a condition of the Permits. Any withheld payment shall be promptly made upon the Contractor's full compliance with the Contract, or resolution of impending fines or damage claims.

1.17 ENVIRONMENTAL PROTECTION

The Contractor shall comply with all local, state, and federal requirements for protection of:

- A. The environment during the Work. No later than fifteen (15) days following award of contract and at least ten (10) days prior to mobilization to the site, Contractor shall submit a comprehensive plan describing the means and methods to be employed for protection, containment, and clean up. Contractor shall ensure that personnel are properly trained and that sufficient equipment and materials are readily available for use if required. Contractor shall abide by state and federal spill-reporting requirements. Clean-up required as a result of Contractor negligence shall be the sole responsibility of the Contractor at no additional cost to the Owner.
- B. During execution of the Work, the Contractor is required to install and maintain any and all required containment systems to protect adjacent streets and properties. Consult Section 570 of the NYSDOT Standard Specifications.
- C. 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.

1.18 TEMPORARY WORK

Labor, equipment, materials, and services required to perform the Work that, upon completion, are not a part of the Work, shall be furnished, installed, and subsequently removed from the site by the Contractor.

1.19 SAFETY PLAN

No later than ten (10) days following award of Contract and at least ten (10) days prior to mobilization to the site, Contractor shall submit two (2) copies of his project-specific Safety Plan by the Owner.

1.20 MATERIAL SAFETY DATA SHEETS

No later than ten (10) days following award of contract and at least ten (10) days prior to mobilization to the site, Contractor shall submit two (2) three-ring bound sets of all Material Safety Data Sheets (MSDS) for materials anticipated for use in execution of the Work. As the Work progresses and new materials are used on the project, Contractor shall submit two (2) copies of the corresponding MSDS's for these new materials no later than the time of arrival of the materials on site. ALL MSDS sheets regarding materials used in the execution of the Work shall be up-to-date and stored in the Contractor's onsite job trailer or office.

1.21 WORK SCHEDULE REQUIREMENTS

Access to the site and acceptable working hours are to be determined by the Owner, specified prior to the commencement of Work, and strictly adhered to throughout contract Work. Work shall be in compliance with local noise restriction ordinances.

1.22 ENGINEERING SERVICES CHARGEABLE TO THE CONTRACTOR

The Owner reserves the right to charge the Contractor for additional engineering and inspection services if required, including, but not limited to, Contractor's actions or inactions, delays, quality assurance failures, re-work, etc.

1.23 CONTRACTOR'S REPRESENTATIVE

The Contractor shall assign an individual to be the single point of contact for all job-related correspondence and issues. This individual shall be assigned to the project from start to finish, and shall not be replaced without permission from the Owner whose permission should not be unreasonably withheld. This individual shall be responsible to disseminate information to other members of the Contractor's staff and to applicable subcontractors as necessary. This individual shall be the Contractor's designated representative at the site, and shall be authorized to conclude all matters, financial and otherwise, on the Contractor's behalf. The Contractor's Representative shall attend all project meetings and shall be on site at all times while the Contractor or his Subcontractors are present on site.

1.24 MEANS AND METHODS

The structures have been specified to be blast-cleaned, primed, and provided with intermediate and finish coats. The furnishing of this work is solely the responsibility of the Contractor. Review of construction by the Engineer of Record is for general conformance with the Contract Documents only. Lack of comment by the Owner and Owner's Representative with regard to construction procedures shall not be interpreted as approval or acceptance of any such procedures.

1.25 PRECEDENCE

It is expressly understood and agreed that failure by the Owner or Owner's Representative to exercise his authority or prerogative to order the Contractor for any duly authorized purpose shall not be considered to set a precedent for any other activities.

1.26 SAFETY OF PERSONS AND PROPERTY

The Contractor is solely responsible for the safety of his operations. The Contractor shall take precautions for the safety of, and shall provide protection to prevent damage, injury or loss to:

- A. Persons employed by the Contractor in performance of the Work, and persons nearby that may be affected by the Contractor's operations or the Work;
- B. The Work, including all equipment and materials which will be incorporated in the Work;
- C. Other properties and structures at the site, or on adjacent properties.

1.27 UNCOVERING WORK

The Contractor shall notify the Construction Manager prior to covering any Work. The Contractor shall not proceed to cover the Work until formal approval from the Construction Manager is provided in writing. If any Work is covered prior to acceptance by the Owner or Construction Manager, the Work shall, if requested by the Owner, be uncovered for the Owner's observation and then be re-covered at the Contractor's sole cost and expense.

1.28 DAILY CONSTRUCTION REPORTS

For each day that Work is performed at the site, the Contractor shall prepare and submit a Daily Construction Report to the Construction Manager. Contractor shall include the following information in the report, as a minimum:

- A. Project name
- B. Contractor name
- C. Date
- D. Hours worked
- E. Weather conditions
- F. Subcontractors working on site
- G. Material deliveries (material, quantity, and vendor)
- H. Trades working on site (trade and number of workers per trade)
- I. Equipment on site (manufacturer and model number, with notation of whether the equipment was idle or was used in the Work)
- J. Specific work performed, location and type of work
- K. Visitors to the site
- L. Materials or equipment leaving the site (including debris removal)
- M. Incident descriptions
- N. Contractor shall submit reports no later than 12:00 hours for the previous day's work.

1.29 MONITORING OF EXISTING STRUCTURES DURING CONSTRUCTION

The Owner reserves the right to establish an independent monitoring program in order to evaluate the effect of the Work on the existing structures to remain on site. Such monitoring may include, but is not necessarily limited to, settlement gauges, tilt plates, and crack gauges.

The Owner reserves the right to suspend the Contractor's operations at any time based upon the monitoring data.

1.30 EXCAVATED MATERIAL

Not Used

1.31 ENGINEERING REVIEW AND SPECIAL INSPECTION

At key stages throughout the Work, engineering inspections are required to ensure the Work is being performed in accordance with the Contract Documents. These inspections will be performed by a Special Inspector, as selected by the Construction Manager at the discretion of the Owner. The final acceptance of the Work will be performed by the Engineer of Record. The key stages are specific to each repair type. Additional pre and post inspection criteria may be required at the discretion of the Special Inspector, Engineer of Record or Construction Manager.

1.32 EQUIPMENT

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-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.

END OF SECTION

SECTION 01110

SUMMARY OF WORK

PART I - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

Please see Section 08851

1.02 EXAMINATION OF DOCUMENTS AND SITE OF WORK

The Proposer acknowledges the following:

- A. The Proposer has reviewed and examined the Proposal Documents to the degree which he is satisfied that the Proposal submitted includes the cost to perform the Work as set forth in the proposed Contract Documents.
- B. The Proposer has informed himself of the existing conditions and limitations under which the Work is to be performed and that the Proposal submitted includes the cost to account for these existing conditions and limitations.
- C. The Proposer acknowledges that any substructure and subsurface condition information provided with the Proposal Documents is for information only.
- D. The Proposer is permitted to perform his own investigation solely for purposes of development of a Proposal. Any site investigation that the Proposer performs, including subsurface, hydrographic, above or below water, or any other non- destructive or destructive testing, shall be documented by the Proposer at the time of the investigation. Results of any investigation performed by the Proposer, which is not representative in the Proposal Documents, and which impact the Proposal, shall be submitted with the Proposal. This information shall be kept confidential during the Contractor selection process.
- E. Proposers are permitted to perform investigations at the site by appointment prior to submitting a proposal. Appointment requests shall be in writing and shall be made through the Owner's Representative at least seventy-two hours prior to the intended time of visit. The Proposer shall provide all required insurance and forms to the Owner's Representative and receive authorization prior to performing any investigation.

1.03 PROOF OF COMPETENCY OF PROPOSER

A Proposer may be required to furnish evidence satisfactory to the Owner that he and his proposed subcontractors have sufficient means and experience in the types of work called for to assure completion of the Contract in a satisfactory manner. Such evidence includes representative project information, similar to the scope and magnitude of this project, consisting of references, contract value, and other pertinent information.

1.04 EXECUTION OF AGREEMENT

- A. Certificates of Insurance shall be approved by the Owner before the successful Proposer may proceed with the Work. Failure or refusal to provide Certificates of Insurance in a form satisfactory to the Owner shall subject the successful Proposer to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.
- B. Certificates of Insurance shall name, at a minimum, the Owner, Owner's Representative and Consulting Engineer as additional insured parties.

1.05 INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO PROPOSING

- A. If any person contemplating submitting a Proposal for construction of the Work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies in or omissions from any part of the proposed Contract Documents, he must submit to the Owner's Representative, with copy to the Owner, a written request for interpretation thereof by not later than seven (7) days prior to the Proposal due date. The person submitting the request shall be responsible for its prompt delivery.
- B. Interpretation or correction of Contract Documents will be made only by Addendum and will be mailed or delivered to each Proposer of Record. The Owner and Owner's Representative will not be responsible for any other explanations or interpretations of the Contract Documents.

1.06 PRE-PROPOSAL CONFERENCE AND JOB SITE WALKTHROUGH

A Pre-Proposal Conference will be held at the site for the purpose of considering questions posed by Proposers and for the purpose of holding a walkthrough of the project site.

Proposers are expected to provide written confirmation of attendance to the Owner's Representative at least two (2) days prior to the Pre-Proposal Conference.

Clarifications, corrections, and changes, made as a result of the Pre-Proposal Conference, shall be made by Addendum only. The Proposer shall not construe statements made during the Pre-Proposal Conference, by the Owner, the Owner's Representative (Engineer), as a change of terms or conditions of the Proposal Documents.

1.07 CONSTRUCTION TIME

The Contractor shall commence and perform the Work expeditiously in accordance with the Contractor's construction schedule with adequate, trained forces and shall achieve substantial completion and final completion within the times stated within the schedule.

Within the Form of Proposal, provide the total number of days which the Proposer proposes to complete the Work. The schedule is to commence with issuance of the Owner's Executed Contract on or about April 1, 2016, and be 100 percent completed, including all final inspections, by June 30, 2016.

1.08 BASE BID

Base Bid provided shall be complete, including all mark-up, and shall include all appropriate overheads, profit, and cost of labor, materials, equipment, required permits to perform the Work and costs associated with services necessary to complete the substructure rehabilitation work in accordance with the Contract Documents.

For Work to be performed on a unit price based on linear footage, or as specifically directed by the Owner, the estimated quantities are not guaranteed and are solely for the purpose of comparison of proposals and determining an initial Contract price.

Payment for unit price work shall be based upon the total quantity completed and accepted by the Owner and as described below:

- A. The lump sum price for the **Mobilization/Demobilization** shall consist of obtaining all required permits; preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; preparation of a construction schedule; furnishing and erecting field offices, laboratory, batch plants, and other facilities necessary for work on the project; badging and training of flaggers, escorts, gate guards and other employees as specified herein; and all other work which must be performed or cost incurred prior to beginning work on the various contract items at the project site. Mobilization shall include the following principal items:
 - 1. Permits for this project from all regulatory agencies that have jurisdiction over the Project Site, including but not limited to BPCA Access Permit, NYSDOT, NYCDOT, and NYCDOB.
 - 2. The schedule of costs breakdown of the Bid.
 - 3. The Contractor's approved Baseline Construction Schedule.
 - 4. Contractor's Operation and Storage Yard (Staging Area), including the complete installation of all field offices with utilities, fencing and gates, and supplies.
 - 5. Moving onto the Site all equipment and materials required for the first thirty (30) days of construction.
 - 6. Submittals of Shop and Coordination Drawings for the first thirty (30) days of construction.
 - 7. Posting all required OSHA notices and establishing on-site safety programs.
 - 8. Demobilization shall include removal of construction facilities, including all utilities, and equipment off the Site and final cleanup of the Site after completion of the Project.
- B. The lump sum price for **General Conditions** shall consist of the following principal items:
 - 1. Project management and project supervision including the following:
 - a. Superintendent(s)
 - b. Safety Manager
 - c. CPM Scheduler
 - d. Quality Assurance / Quality Control
 - e. Project Manager(s)
 - f. Project Executive

- g. Field Office Engineer
 - h. Field Office Support Staff
 - i. Project Expeditor
 - j. Assistant Superintendent(s)
- 2. Insurance
 - 3. Profit
 - 4. Front Office Overhead
 - 5. Safety and Environmental Controls/Protection Site Conditions:
 - a. Temporary Power Consumption (Offices)
 - b. Temporary Power Consumption (General Site Use)
 - c. Temporary Water and Sewer Consumption
 - d. Temporary Water Hookup, Distribution & Meters
 - e. Temporary Electrical Hookup, Distribution & Meters
 - f. Temporary Fire Protection
 - g. Temporary Heating & Cooling
 - h. Temporary Fencing
 - i. Temporary Entries
 - j. Street Cleaning (by G.C.)
 - k. Traffic Control Measures
 - l. Traffic Control Maintenance
 - m. Temporary Barricades & Signage
 - n. Temporary Lighting
 - o. Temporary Partitions & Covered Floor Openings
 - p. Temporary Toilets/Sanitary Measures
 - q. Temporary Laydown (prep and restoration)
 - r. Security System/Watchman (contractor's option)
 - s. Pre-construction Photo Documentation
 - t. Progress Photos
 - u. Temporary Protection (in-place work/adjacent structures)

- C. The Lump Sum price for the **Performance and Payment Bonds** shall consist of obtaining all required bonds including execution and acceptance by the Owner.
- D. The Lump Sum price for **Medical Testing/Exposure Monitoring** shall include all reasonable and customary costs incurred (based on receipted bills submitted to the Engineer, plus 5% overhead and profit (NYSDOT Standard Specifications §570-5.02).
- E. The lump sum price for **Class B Containment** shall include the cost of all labor, materials and equipment necessary to complete the work (NYSDOT Standard Specifications §570-5.07).
- F. The Unit Price per week for **Decontamination Facilities** shall include the cost of all labor, materials, equipment, utility, and disposal charges necessary to satisfactorily complete the work (NYSDOT Standard Specifications §570-5.04).
- G. The Lump Sum for **Treatment and Disposal of Paint Removal Waste** shall include the cost of all labor, materials, equipment, sampling, testing, and fees necessary to complete the work based

on the assumption that treatment by stabilization will satisfy the applicable Federal regulations. Should this prove not to be the case on an industry wide basis, as opposed to an individual Treatment or Disposal Facility, the difference in cost between the cost of treatment by stabilization and the method subsequently found to be necessary shall provide the basis for an order on contract. Only waste for which manifest copies are returned to the Engineer by the Contractor and Disposal Facility will be authorized for payment.

The extent of the Contractor's compliance with the provisions under timeliness of disposal will be considered as relevant in any future determination of an award to the Contractor as the lowest responsible bidder for any project under the supervision of the Department.

See NYSDOT Standard Specifications §571 for Contractor's liability to NYSDOT.

- H. The Unit Price per Linear Foot to **Furnish & Install 8' High Temporary Chain Link Fence and Gate** shall include the cost of all labor, materials, and equipment necessary to complete the work.
- I. The Per Day price for the **Basic Work Zone Traffic Control Plan** (Including Permits) shall include the cost of all labor, materials, and equipment necessary to complete the work.
- J. The Per Day price for **Type III Construction Barricade Rental** shall include the cost of all materials and equipment necessary secure the construction barricades and adhere to the approved Traffic Control Plan.
- K. The Lump Sum price for **Surface Preparation to SP-10, Applying Primary, Intermediate & Final Coat** shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work, including the cost of providing protection against damage to public and private property during surface preparation and paint application. Payment for the containment, collection and disposal of dust and paint waste generated by surface preparation work shall be paid for separately.

Progress payments will be based on the percentage of steel cleaned and painted. No more than 60% of the quantity will be paid for surface preparation and priming. The remaining amount will be paid following the satisfactory completion of work. (NYSDOT Standard Specifications §573-5)

- L. The Per Square Foot price for **Total Overcoat** shall include the cost of all labor, materials, and equipment necessary to complete the work, including the cost of providing protection against damage to public and private property during pressure washing and paint application. Payment for the containment, collection and disposal of dust and paint waste generated by surface preparation work shall be paid for separately. (NYSDOT Standard Specifications §574-5)

Progress payments will be based on the percentage of steel cleaned and painted. 60% of the quantity will be paid for surface preparation and priming. The remaining amount will be paid following the satisfactory completion of work.

- M. The Unit Price per unit (EA) for **Window Cleaning** shall include the cost of all labor, materials, and equipment necessary to complete the work, including the cost of providing protection against damage to public and private property during the cleaning operations.
- N. The Lump Sum price to **Furnish and Install Bird Barriers** shall include the cost of all labor, materials, and equipment necessary to complete the work.

A. SPECIAL CONDITIONS

The Proposer acknowledges and shall include the cost for the following in the Proposal:

1. Quantities for each Typical repair item are estimates based on limited field visits and lack of access to the entire structure. The contractor is responsible for satisfying themselves of the existing conditions to provide a complete job, regardless of the lack of data presented herein.

1.09 ENGINEERING REVIEW AND SPECIAL INSPECTION

At key stages of SP-10 paint removal, application of primer, and application of finishing coatings, engineering inspections are required to ensure the Work is being performed in accordance with the Contract Documents. These inspections will be performed by a Special Inspector, as selected by the Construction Manager at the discretion of the Owner. The final acceptance of the Work will be performed by the Engineer of Record. The key stages are specific to each repair type. Additional pre and post inspection criteria may be required at the discretion of the Special Inspector, Engineer of Record or Construction Manager.

1.10 GENERAL CONDITIONS

The Contractor shall commence and perform the Work expeditiously in accordance with the Contractor's construction schedule with adequate, trained forces and shall achieve substantial completion and final completion within the times stated within the schedule.

Within the Form of Proposal, provide the total number of days which the Proposer proposes to complete the Work. The schedule is to commence with issuance of the Owner's Purchase Order.

1.11 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.

1.12 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 ensure no conflicts occur to compromise the timely completion of all work specified.

1.13 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.

1.14 WORKING HOURS

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) and a DSBS after hours work permit.

1.15 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, and for the Owner's Engineer.
- D. The Contractor is responsible for the cost of all utilities.

1.16 EQUIPMENT

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

1.17 RECEIPT OF MATERIALS

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.

1.18 STORAGE OF MATERIALS

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

1.19 EXISTING MATERIALS

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

1.20 SITE OFFICE FACILITIES AND STORAGE SHED

A. The Contractor shall be required to provide at his own cost and expense one enclosure at a location to be determined by the Owner. Install and connect all utility services to said enclosure within five (5) days of start of work.

B. The enclosure shall be for the express use of the Resident Engineer.

C. Temporary Electrical Services:

1. Electrical work required for the enclosure will be furnished and maintained under this contract.
2. The Contractor shall furnish, install and maintain a temporary electric feeder to the Resident Engineer's enclosure immediately upon its placement at the job site.
3. 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.
4. Make all arrangements and pay all costs to provide electric service.
5. 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.
6. 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.
7. All repair work due to these removals shall be the responsibility of the Contractor.

D. Maintenance:

1. The Contractor shall provide and pay all costs for 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.

E. Permits

The Contractor shall make the necessary arrangements for, and obtain all permits required for this work.

- F. The Contractor shall provide his own storage. No equipment or materials storage will be provided by the Owner.

1.21 POWER OUTAGE

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

1.22 FINAL INSPECTION

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.

1.23 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.

1.24 RECYCLABLES

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.

1.25 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

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 the Tribeca Bridge 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 bridge 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 maintenance operations for all areas adjacent to and within the contract limits.
 - 4. Construction Gates / Entrances: Keep all construction gates / entrances, if required, 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.
 - 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

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 “Submittal Procedures” for means and methods of submitting product data, shop drawings, and construction operations to perform the Contract Work.

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 performance of one part of the Work depends on performance of other components, before or after its own completion.
 - 2. Coordinate performance 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 Contract Work.
 - 4. Provide detailed written construction work plans within 5 days of award in a format and containing information as requested by the Construction Manager.
- 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 performance of repair 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 5 days of award, 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. 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.
1. Project Manager: Submit resume confirming a minimum of 10 years of bridge painting and/or bridge repair experience.
 2. Project superintendent: Submit resume confirming a minimum of 10 years of bridge painting and/or bridge repair experience.
 3. Office Engineer: Submit resume confirming a minimum of 5 years of bridge painting and/or bridge repair experience.
 4. Include special personnel required for coordination of operations with other contractors.
 5. Site Safety Representative: Submit resume confirming a minimum of 5 years of bridge construction site safety experience.

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 5 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.
 - 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 performance of Contract Work 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.
 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.
3. Reporting: Record meeting results and distribute copies within two (2) days 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

SECTION 01320

CONSTRUCTION PROGRESS DOCUMENTATION

PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. Specification section 01330, submittal procedures.

1.02 SUBMITTALS

The Contractor shall submit the following to the Approving Authority in accordance with Section entitled "Submittal Procedures, Section 01330."

- A. Schedules

1. Construction schedule
2. Material delivery schedule

1.03 CONSTRUCTION SCHEDULE

Within 5 days after receipt of the Notice of Award, prepare and submit to the Owner's representative for approval a Critical Path Method (CPM) Schedule.

1.04 MATERIAL DELIVERY SCHEDULE

- A. Initial Schedule

Within 10 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.

1.05 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:
 - 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.
 - 5. Cleaning, blasting, priming, and painting sequence for inspection purposes.

C. CPM Submittals and Procedures

Submit all network analysis and updates electronically via e-mail. The network analysis system shall be submitted in Microsoft Project 2010. The network analysis system shall be kept current, with changes made to reflect the actual progress and status of the construction.

1.06 UPDATED SCHEDULES

Update the construction schedule and material delivery schedule at monthly intervals to correspond to payment applications 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

SECTION 01330

SUBMITTAL PROCEDURES

PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. Specification Section 01320, Construction Progress Documentation.
- B. Specification Section 01450, Quality Assurance.

1.02 DEFINITIONS

- A. Submittal: Submittals requirements are specified in the respective specification sections.
- B. Types of Submittals (SD)

1. SD-01 Preconstruction Submittals

Certificates of Insurance, List of Proposed Subcontractors, List of Proposed Products, Construction Progress Schedule, Submittal Register, Schedule of Prices, Health and Safety Plan, Work Plan, Quality Control Plan, Environmental Protection Plan, Site Utilization Plan.

2. SD-02 Shop Drawings

- a. Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.
- b. Diagrams and instructions from a manufacturer or fabricator for use in producing the product and acts as aids to the Contractor for integrating the product or system into the project.
- c. Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated. An attachment shall be provided with the Shop Drawings which clearly define the methodology for each repair type.
- d. Approval of shop drawings shall not relieve the Contractor of the responsibility for any errors or for furnishing materials of the proper size.

3. SD-03 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. Product data includes but is not limited to the following:

- a. Materials & equipment used to perform SP-1 cleaning.
- b. Materials & equipment used to perform SP-6 cleaning.
- c. Materials & equipment used to perform SP-10 cleaning.
- d. Primer
- e. Paint
- f. Samples of warranty language when the contract requires extended product warranties.

4. SD-04 Samples
Samples, including both fabricated and un-fabricated physical examples of materials, products, and units of work as complete units or as portions of units of work. A type of sample.
5. SD-05 Design Data
Design calculations, mix designs, analyses or other data, written in nature and pertaining to a part of work.
6. SD-06 Test Reports
 - a. Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three (3) years of date of contract award for the project.)
 - b. Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.
 - c. Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.
7. SD-07 Certificates
 - a. Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of this project contract and clearly name the project and list the specific requirements which it is intended to address.
 - b. Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to prove quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.
8. SD-08 Manufacturer's Instructions
 - a. Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.
9. SD-09 Schedules
 - a. 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.
10. SD-10 Closeout Submittals
 - a. The Construction Manager is responsible for providing the following to the Engineer of Record for review prior to the project close out:
 - i. Field Reports
 1. Upon completion of the work, and prior to the final project closeout, the Construction Manager shall submit to the Engineer of Record all Field Reports from the engineering review site visits. These include, but are not limited to:

- a. Certification by the Special Inspector that all sections of the bridge specified in the Contract Drawings were satisfactorily cleaned, blasted, repaired, and repainted according to SSPC Standards.
- b. Certification by the Special Inspector that all test results have met or exceeded the minimum requirements laid out in the Contract Documents.

ii. As-Built Drawings:

1. Contractor shall submit six (6) sets of drawings, marked "As-Built" within four (4) weeks upon Contractor demobilization. These drawings shall be submitted to the Construction Manager, who shall forward to the Engineer of Record. Approval from the Engineer of Record is required for the final project closeout.

iii. Test Reports:

1. Upon completion of the work, and prior to the final project closeout, the Construction Manager shall submit to the Engineer of Record all Test Reports from the required materials and products testing as laid in the Contract Documents. Test reports must confirm that all materials and products placed during the Work have met or exceeded the minimum requirements of the Contract Documents in order for the Engineer of Record's approval. All Test Reports must be approved by the Engineer of Record for the final project closeout.

iv. Photographs

1. The Construction Manager shall submit to the Engineer of Record a typical photograph illustrating each type of repair in its Pre-Inspection and Post-Inspection completeness.

- v. The items required for final review by the Engineer of Record are not limited to those listed above.

11. For this project, the requirements under SD-03 and SD-08 shall be combined under one submittal for "Product Data". Product data will be submitted for all repairs identified in the contract drawings. The product data submittal may be combined with a number of submittals which reference one particular repair.

- C. Approving Authority: Person authorized to approve submittal. The Engineer of Record shall review submittals in regard to materials, methodology, shop drawings and other components involved in the quality assurance of the work. The Construction Manager shall review submittals in regard to but not limited to site utilization, disposal, coordination, environmental controls, schedule, safety and health requirements, etc.
- D. Work: As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

PART II – PRODUCTS

(NOT APPLICABLE)

PART III – EXECUTION

3.01 SUBMITTAL REGISTER

- A. Within 5 calendar days after receipt of Notice to Proceed, provide submittal register listing all submittals required by the contract. Contractor shall maintain at the site, an up-to-date submittal register showing the status of all submittals as the work progresses. The submittal register format is subject to review and approval by the Construction Manager and Engineer of Record. The Contractor shall indicate critical submittals and critical dates for approval. The register shall also include the following at a minimum:
 - 1. Activity Number: Activity number from the project schedule.
 - 2. Transmittal Number: Contractor assigned list of consecutive numbers.
 - 3. Contractor Submittal Date: Scheduled date for approving authority to receive submittals.
 - 4. Contractor Approval Date: Date Contractor needs approval of submittal.
 - 5. Contractor Material Date: Date that Contractor needs material delivered to Contractor control.
- B. The Construction Manager or Engineer of Record will not review submittals until the register has been submitted in accordance with the previous paragraph and approved. Should a submittal register be generated by the Engineer of Record, it can be used as a guideline by the Contractor but does not relieve him of submissions required by the Contract Documents that may have been omitted.
- C. Items may be added or removed from the Submittal Register throughout the duration of the Work, as desired by the Construction Manager or Engineer of Record. Additional submittals that are not listed in the Submittal Register may be required as per the Construction Manager's contract.

3.02 PROCEDURES FOR SUBMITTALS

- A. Contractor shall make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements. Submittals that are not required will not be reviewed by the Construction Manager.
 - 1. Constraints
 - a. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.
 - b. Submittals shall be complete for each definable feature of work; components of definable feature interrelated as a system shall be submitted at same time.
 - c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.

- d. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.

2. Scheduling

- a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.
- b. Except as specified otherwise, allow for review period, beginning with receipt by approving authority, which includes at least 5 working days for submittals. Period of review for each re-submittal is the same as for initial submittal.

3.03 VARIATIONS

- A. Variations from contract requirements require the Engineer of Record approval. Do not substitute materials, equipment, or methods unless such substitution has been specifically accepted in writing by the Construction Manager.
 - 1. Considering Variations: Discussion with the Construction Manager prior to submission will help ensure functional and quality requirements are met and minimize rejections and re-submittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).
 - 2. Proposing Variations: When proposing a variation, deliver written request to the Construction Manager, 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-savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation, identify variations from the contract requirements and changes in other work or products.
 - 3. Warranting That Variations Are Compatible: When delivering a variation for approval, Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work. In submitting a substitution or variation, the Contractor represents that he will coordinate the installation of accepted substitutions or variation, and additional costs or delays caused by the substitution or variation will not constitute grounds for adjustments to the contract.
 - 4. Review Schedule Is Modified: In addition to normal submittal review period, a minimum period of five (5) and maximum period of 14 working days will be allowed for consideration by the Owner of submittals with variations.

3.04 CONTRACTOR'S RESPONSIBILITIES

- A. 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.
- B. Transmit submittals to Construction Manager in accordance with schedule on approved Submittal Register, and to prevent delays in the work, delays to the Owner, or delays to separate Contractors.
- C. Advise Construction Manager as required by paragraph entitled: "Variations."

- D. Correct and resubmit submittal as directed by approving authority. When resubmitting disapproved transmittals or transmittals noted for re-submittal, the Contractor shall provide copy of that previously submitted transmittal including all reviewer comments for use by approving authority. Direct specific attention in writing on or resubmitted submittal to revisions not requested by approving authority on previous submissions.
- E. Submittals are to be done electronically, via email to the team determined by the owner, in PDF format.
- F. Furnish hard copies of submittal when requested by the Construction Manager, to a limit of 6 copies per submittal.
- G. Complete work which must be accomplished as basis of a submittal in time to allow submittal to occur as scheduled.
- H. Ensure no work has begun until submittals for that work have been reviewed and returned stamped by the Engineer of Record, as explained in Paragraph 3.08 D or this Section, except to the extent that a portion of work must be accomplished as basis of submittal.

3.05 DELIVERY OF SUBMITTALS

- A. Transmittal Form: Transmit each submittal, except sample installations and sample panels, to office of approving authority. Transmit submittals electronically with transmittal form prescribed by Construction Manager and standard for project. The transmittal form shall identify Contractor, indicate date of submittal, and include information prescribed by transmittal form and required in paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations. All submittals must be sent to the Construction Manager, who shall forward submittals on to the Engineer of Record, if required, for approval.
- B. Identifying Submittals: 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 transmittal form. Mark each copy of each submittal identically, with the following:
 - 1. Construction contract number.
 - 2. Section number of the specification section by which submittal is required.
 - 3. Submittal description (SD) number of each component of submittal.
 - 4. When a resubmission, add alphabetic suffix on submittal description, for example, SD-10A, to indicate resubmission.
 - 5. Name, address, and telephone number of subcontractor, supplier, manufacturer, and any other second tier Contractor associated with submittal.
 - 6. Product identification and location in project.

3.06 FORMAT OF SUBMITTALS

- A. Format for SD-02 Shop Drawings
 - 1. Shop drawings shall not be less than 8½ by 11 inches nor more than 22 by 34 inches. Submit in

the form of blue line or black line prints of each sheet. Blue prints will not be accepted.

2. Present 8½ by 11 inch sized shop drawings as part of the bound volume for submittals required by section. Present larger drawings in sets.
3. Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph entitled "Identifying Submittals."
4. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Shop drawing dimensions shall be the same unit of measure as indicated on the contract drawings. Identify materials and products for work shown.

B. Format of SD-03 Product Data and SD-08 Manufacturer's Instruction's

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

C. Format of SD-04 Samples

1. Furnish samples in sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately the same size as specified:
 - a. Sample of Equipment or Device: Full size.
 - b. Sample of Materials Less Than 2 by 3 inches: Built up to 8½ by 11 inches.
 - c. Sample of Materials Exceeding 8½ by 11 inches: Cut down to 8½ by 11 inches and adequate to indicate color, texture, and material variations.
 - d. Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.
 - e. Sample of Non-Solid Materials: Pint. Examples of non-solid materials are sand and paint.
 - f. Color Selection Samples: 2 by 4 inches.
 - g. Sample Panel: 2 by 2 feet.

D. Format of SD-05 Design Data and SD-07 Certificates

1. Provide design data and certificates on 8½ by 11 inches paper. Provide a bound volume for submittals containing numerous pages.

E. Format of SD-06 Test Reports

1. Provide reports on 8½ by 11 inch paper in a complete bound volume.
2. Indicate by prominent notation, each report in the submittal. Indicate specification number and paragraph number to which it pertains.

F. Format of SD-01 Preconstruction Submittals and SD-09 Closeout Submittals

1. When submittal includes a document which is to be used in project or become part of project record, other than as a submittal, do not apply Contractor's approval stamp to document, but to a separate sheet accompanying document.
2. As-Built drawings sets shall be full sized (24" x 32") and represent the installed condition of the Work. The drawings shall clearly mark out where the installed condition differs from the Contract Documents. In addition to the hard copies, the As-Built drawings shall be submitted electronically in both AutoCAD format (.dwg) version 2007 or newer and Portable Document Format (.pdf).
3. Photographs shall be submitted electronically in JPEG-format (.jpg) as well as Portable Document Format (.pdf). Photographs shall be in color and shall be a minimum of 3 megapixels in size. The location, photo directions, elevation, and date/time taken shall be submitted in conjunction with the PDF submission.

3.07 QUANTITY OF SUBMITTALS

A. Unless otherwise noted, all submittals should be in PDF format and transmitted electronically. If hard copies are requested:

1. Number of copies of SD-02 Shop Drawings
 - a. The Owner and/or Construction Manager may designate that all submittals shall be "paperless" and the contractor may transmit submittals via electronic file.
 - b. Submit four (4) copies of submittals of Shop Drawings. One (1) print with the Construction Manager's review comments will be returned to the Contractor. The Contractor may make and distribute such copies as desired.
2. Number of Copies of SD-03 Product Data and SD-08 Manufacturer's Instructions
 - a. Submit in compliance with quantity requirements specified for shop drawings.
3. SD-04 Number of Samples
 - a. Submit two (2) samples, or two (2) sets of samples showing range of variation, of each required item. One (1) approved sample or set of samples will be retained by approving authority and one (1) will be returned to Contractor.
 - b. Submit one (1) sample installation, where directed.
 - c. Submit one (1) sample of non-solid materials.
4. Number of Copies SD-05 Design Data and SD-07 Certificates

- a. Submit in compliance with quantity requirements specified for shop drawings.
- 5. Number of Copies SD-06 Test Reports
 - a. Submit in compliance with quantity requirements specified for shop drawings.
- 6. Number of Copies of SD-01 Preconstruction Submittals and SD-09 Closeout Submittals.
 - a. Unless otherwise specified, submit administrative submittals compliance with quantity requirements specified for shop drawings. Submit six (6) copies of all Closeout Submittals.

3.08 REVIEW BY OWNER'S REPRESENTATIVE

- A. Review by the Construction Manager and Engineer of Record does not relieve the Contractor from responsibility for errors or omissions which may exist in the submitted data.
- B. Revisions:
 - 1. Make revisions required by the Construction Manager and Engineer of Record.
 - 2. If the Contractor considers any required revision to be a change, he shall so notify the Construction Manager in accordance with the specifications.
 - 3. Make only those revisions directed or accepted by the Construction Manager and Engineer of Record.
- C. Reimbursement of Owner's Representative's Costs:
 - 1. In the event substitutions are proposed to the Construction Manager after the Contract has been awarded, the Construction Manager will record all time used by him and by his consultants in evaluation of each such proposed substitution.
 - 2. Whether or not the Construction Manager and/or Engineer of Record accepts a proposed substitution, the Contractor may be responsible for the costs of the Construction Manager and/or Engineer of Record and consultants for all time spent by them in evaluating the proposed substitution, plus administrative fees. The costs will be deducted from outstanding pay requests due to the Contractor by way of a Change Order.
- D. Engineer of Record Review Stamp:
 - 1. The Engineer of Record will use the following approval statement when returning submittals to the Contractor as "Fabrication May Proceed" or "Do Not Fabricate":
 - a. "Submission has been checked for general conformance with design concept of the project. Comments made on [type of submittal] do not relieve the Contractor from compliance with requirements of the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the work of all trades."

Fabrication May Proceed: _____ Do Not Fabricate: _____

By: _____ Date: _____

Note: _____

2. Actions Possible

- a. The Engineer of Record review stamp will indicate the status of the submittal, and corresponding action to be taken by the Contractor as follows:
 - i. Submission is in general conformance with design concept: When the Engineer of Record marks the submittal "Submission is in general conformance with design concept", the Work covered by the submittal may proceed, provided it complies with the requirements of the Contract Documents. Final payment depends on that compliance.
 - ii. Submission is in general conformance with design concept, except as noted: When the Engineer of Record marks the submittal "Submission is in general conformance with design concept, except as noted", the Work covered by the submittal may proceed provided it complies with the notations on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 - iii. Revise and Resubmit: When the Engineer of Record marks the submittal "Revise and Resubmit", the Work covered by the submittal may proceed provided it complies with the notations on the submittal and requirements of the Contract Documents. The submittal must be revised to comply with the notations on the submittal and requirements of the Contract Documents, and must then resubmit to the Engineer of Record. Final payment depends on that compliance.
 - iv. Submission is rejected for non-conformance with design concept: When the Engineer of Record marks the submittal "Submission is rejected for non-conformance with design concept", do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise and prepare a new submittal according to the notations, resubmit without delay. Repeat if necessary to obtain a different action mark.

Do not use, or allow others to use submittals marked "Submission is rejected for non-conformance with design concept" at the Project Site or elsewhere where Work is in progress.

PART IV – MEASUREMENT AND PAYMENT

Include within the Contract prices the amount sufficient to cover all costs for work of this section. No separate payment will be made for work completed under this section. A Schedule of Values shall be submitted to and approved by the Owner's Representative.

END OF SECTION 01330

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 D1400 | Non-Destructive Measurement of Dry Film Thickness of Non-Conductive Coatings Applied to a Non-ferrous Metal Base |
| ASTM D3359 | Measuring Adhesion by Tape Test |
| ASTM D4138 | Measurement of Dry Paint Thickness of Protective Coating Systems by Destructive Means |
| ASTM D4214 | Evaluating Degree of Chalking of Exterior Paint Films |
| ASTM D4258 | Surface Cleaning Concrete for Coating |
| ASTM D4259 | Abrading Concrete |
| ASTM D4263 | Indicating Moisture in Concrete by the Plastic Sheet Method |
| ASTM D4285 | Indicating Oil or Water in Compressed Air |
| ASTM D4414 | Measurement of Wet Film Thickness by Notch Gages |
| ASTM D4417 | Field Measurement of Surface Profile of Blast Cleaned Steel |
| ASTM D4541 | Pull-Off Strength of Coatings Using Portable Adhesion Testers |
| ASTM D4752 | Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub |
| ASTM D6132 | Non-Destructive Measurement of Dry Film Thickness of Applied Organic Coatings Over Concrete Using an Ultrasonic Gage |
| ASTM D6386 | Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting |

CODE OF FEDERAL REGULATIONS (CFR)

| | |
|----------------|---|
| 29 CFR 1910 | Occupational Safety and Health Regulations for General Industry |
| 29 CFR 1910.20 | Access to Employee Exposure and Medical Records |

| | |
|-----------------------|--|
| 29 CFR 1910.132 | General Requirements for Personal Protective Equipment |
| 29 CFR 1910.133 | Eye and Face Protection |
| 29 CFR 1910.134 | Respiratory Protection |
| 29 CFR 1910.146 | Permit-Required Confined Spaces |
| 29 CFR 1910.147 | The Control of Hazardous Energy (Lockout/Tagout) |
| 29 CFR 1926 | Occupational Safety and Health Regulations for the Construction Industry |
| 29 CFR 1926.16 | Rules of Construction |
| 29 CFR 1926.20 | General Safety and Health Provisions |
| 29 CFR 1926.21 | Safety Training and Education |
| 29 CFR 1926.24 | Fire Protection and Prevention |
| 29 CFR 1926.28 | Personal Protective Equipment |
| 29 CFR 1926.32 | Definition of Competent Person |
| 29 CFR 1926.51 | Sanitation |
| 29 CFR 1926.52 | Noise Exposure |
| 29 CFR 1926.57 | Ventilation |
| 29 CFR 1926.59 | Hazard Communication |
| 29 CFR 1926.65 | Emergency Response Plan |
| 29 CFR 1926.101 | Hearing Protection |
| 29 CFR 1926.104 | Safety Belts, Lifelines, and Lanyards |
| 29 CFR 1926.150 | Fire Protection |
| 29 CFR 1926.151 | Fire Prevention |
| 29 CFR 1926.152 | Flammable and Combustible Liquids |
| 29 CFR 1926.154 | Temporary Heating Devices |
| 29 CFR 1926.200 | Accident Prevention Signs and Tags |
| 29 CFR 1926.400 | Electrical Safety |
| 29 CFR 1926.450 – 454 | Scaffolding |

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

| | |
|---------------|---|
| SSPC-SP 1 | Solvent Cleaning |
| SSPC-SP 2 | Hand Tool Cleaning |
| SSPC-SP 3 | Power Tool Cleaning |
| SSPC-SP 5 | White Metal Blast Cleaning |
| SSPC-SP 6 | Commercial Blast Cleaning |
| SSPC-SP 7 | Brush-Off Blast Cleaning |
| SSPC-SP 10 | Near-White Metal Blast Cleaning |
| SSPC-SP 11 | Power Tool Cleaning to Bare Metal |
| SSPC-SP 15 | Commercial Grade Power Tool Cleaning |
| SSPC-SP 12 | Surface Preparation and Cleaning of Steel and Other Hard Materials by High- and Ultrahigh-Pressure Water Jetting Prior to Recoating |
| SSPC-AB 1 | Mineral and Slag Abrasives |
| SSPC-AB 2 | Specification for Cleanliness of Recycled Ferrous Metallic Abrasives |
| SSPC-PA 2 | Measurement of Dry Film Thickness with Magnetic Gages |
| SSPC-Guide 15 | Field Methods for Retrieval and Analysis of Soluble Salts on Steel and Other Nonporous Substrates |
| SSPC-Guide 6 | Guide for Containing Debris Generated During Paint Removal Operations |
| SSPC-VIS 1 | Visual Standard for Abrasive Blast Cleaned Steel |
| SSPC-VIS 3 | Visual Standard for Hand and Power Tool Cleaned Steel |
| SSPC-VIS 4 | Guide and Reference Photographs for Steel Surfaces Prepared by Water Jetting |

NEW YORK STATE DOT SPECIFICATIONS

NYSDOT Safety Bulletin SB-94-4, Histoplasmosis
NYSDOT Section 107-05, Safety and Health Plan

CITY OF NEW YORK

Administrative Code of the City of New York, Section 16, NYC Department of Sanitation Regulations

Title 24, Chapter 219, New York City Noise Control Code

Title 29, Chapters 100-109, Citywide Construction Noise Mitigation

Title 15, Chapter 14, Rules Concerning the Use of Ultra-Low Sulfur Fuel and Emissions Control Technology on City Motor Vehicles

Title 27, Chapter 19, Article 8, Scaffolds

Title 26, Subchapter 2, Article 6, Rigger's License

EQUIPMENT AND COATING MANUFACTURERS' PUBLISHED INSTRUCTIONS

1.02 SUBMITTALS

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

A. Contractor Production Report.

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.
 - 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

Not used.

END OF SECTION 01450

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)

| | |
|-----------------|---------------|
| 42 U.S.C. §7401 | Clean Air Act |
|-----------------|---------------|

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

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."

- 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

- A. 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 leftover 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 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

- A. 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 Air Act.
- B. 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.

3.02 NOISE

- A. 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.

3.03 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.

3.04 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 3.04B.

3.05 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.

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

SECTION 01 52 50

SAFETY REQUIREMENTS

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 A10.14 | 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 industrial hygienist is an individual who is certified by the American Board of Industrial Hygiene.
- B. Certified Safety Professional. A safety manager, safety 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 which result in serious injuries, lost workday cases, non-fatal cases or significant mishaps.

- 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 which 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, and so forth, 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 (APP) 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 which 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. The plan shall include:
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 preconstruction 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 the on-site construction personnel:

- A. Map denoting the 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.
- 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 Owner will determine if the material is hazardous. If material is not hazardous or poses no danger, the Owner will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Owner will issue a modification.

3.02 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages a minimum of 15 days in advance. At a minimum, the request should include the location of the outage, utilities being affected, duration of 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 the 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 any time 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 PERSONAL 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 employees that are qualified. 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 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 manufacturer's 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 provide a greater hazard to the workers.
 - 2. Cranes must be equipped with Load Indicating Devices, anti-two blocks devices, load, 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 for all 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 so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized subsites, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal 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 accomplished in manholes, unless other hazards are present like friable asbestos.
- 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 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 indicated to be relocated or removed by 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 for barricading 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 installed to be able to restrain 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 one sign every 300 feet. All points of entry shall have signs designating the construction site as a hard hat area.

END OF SECTION

107-10 MANAGING SURPLUS MATERIAL AND WASTE.

The Contractor shall manage all surplus materials and waste generated in the performance of the contract in accordance with applicable federal, state, and local laws and regulations. Nothing herein is intended to prevent the Contractor from removing surplus materials or waste to appropriate off-site locations for beneficial reuse, recovery, or recycling purposes. The Contractor is encouraged to reuse, salvage or recycle materials to the maximum extent possible. Surplus or used materials generated from Department contracts that are easily recognizable, maintain their physical properties, are easily separated and transported, and have value as commodities are often recycled. These include metals (steel, iron, etc.), recycled asphalt pavement (RAP) in the form of chunks or millings, and recycled portland cement concrete aggregate (RCA). Surplus and used materials, unless identified otherwise, become the property of the Contractor. In accordance with 6 NYCRR 371.1(e)(1)(xiii) excluded scrap metal is not solid waste when being recycled.

Waste Management shall mean the collection, transportation, transfer, processing, recovery, storage, reclamation, treatment, handling and disposal of waste whether performed directly by the Contractor or others. Unless otherwise noted in the contract documents, all materials or substances that are spent, useless, worthless, or in excess to the Department, including materials generated on-site by the Department's contract supervision and inspection activities, are covered by this subsection.

Unless specifically noted in the contract documents, it is not guaranteed that placement of surplus materials or spoil will be allowed within the right of way. Payment for managing surplus material and solid waste shall be included in the various contract pay items. The absence or unavailability of disposal areas on the contract site or the refusal of a permitted solid waste management facility to accept waste will not be the basis for a dispute for additional compensation for the disposal of wastes.

A. Excess Soil and Rock. Excess soil and rock may be generated by construction activities associated with Department contracts. Excess soil and rock may be presumed uncontaminated absent records, existing data, or knowledge/observation to the contrary. These materials may be excess because the quantity available exceeds the quantity required, or they do not have the engineering properties required for use, or they may not be of economic value in the current location, such as when the cost to transport the material approaches or exceeds its sale value. Provided these materials are uncontaminated, in accordance with 6 NYCRR 360-1.15(b)(7) they are not considered waste when used as fill material. These materials may be sold ("placed in commerce") to a consumer and the consumer is responsible for its use/placement.

B. Spoil. Spoil may include excess soil and rock, and contains recognizable, uncontaminated concrete (including incidental pavement markings), asphalt pavement (including incidental pavement markings), brick, glass or soil materials generated by the cleaning of drainage ditches, culverts, storm sewers, catch basins or related appurtenances. Reinforcing steel embedded in concrete is considered an incidental metal and is included within the definition of concrete. Spoil may be presumed uncontaminated absent records, existing data, or knowledge/observation to the contrary. Spoil shall not be pulverized, shredded, or otherwise processed such that the individual waste components are rendered unrecognizable. Provided spoil is uncontaminated, in accordance with 6 NYCRR 360-1.15(b)(11) these materials are not considered waste when placed in commerce for service as a substitute for conventional aggregate.

Spoil areas for the disposal of excess soil and rock and spoil shall be established and restored in accordance with §107-08 *Protection and Restoration of Property and Landscape*. Excess soil and rock and spoil may be disposed of within the right of way whenever possible to flatten embankment

side slopes, or may be disposed of in other locations within the right of way approved by the Engineer, but is not subject to the provisions governing lift placement and compaction. The Department makes no assurance that appropriate spoil areas within the right of way will be available for any individual contract. If no spoil area is available within the right of way, the Contractor shall dispose of these materials elsewhere, subject to appropriate environmental and land use regulations. Excess soil and rock and spoil may be disposed of at a location outside the right of way that takes no compensation, fee or other form of consideration, exempt from permit requirements, in accordance with 6 NYCRR 360-7(b)(1), between the hours of sunrise and sunset.

C. Construction and Demolition Debris. In accordance with 6 NYCRR 360-1.2(b)(38), Construction and demolition (C&D) debris is uncontaminated solid waste resulting from land clearing and from the construction, remodeling, repair and demolition of utilities, structures, and roads. C&D debris may include excess soil and rock or spoil, and includes but is not limited to: wood (including painted, treated and coated wood and wood products), land clearing debris, plumbing fixtures, electrical wiring, electrical components containing no hazardous liquids, nonfriable asbestos, wall coverings, plaster, drywall, roofing shingles and other roof coverings and pipes or metal attached to or embedded in these waste materials. C&D debris shall not be pulverized, shredded, or otherwise processed such that the individual waste components are rendered unrecognizable. C&D debris shall be disposed of in an permitted C&D waste management or processing facility. Nonfriable asbestos shall be disposed of at permitted C&D waste management facility. If a C&D waste facility is not available, C&D debris may be disposed of at a solid waste facility.

Unadulterated wood chips and mulch used for mulch, landscaping, or erosion control purposes are not solid waste. Trees, stumps, wood chips and yard waste generated from activities within the right of way may be disposed of in spoil areas within the right of way only, but are not subject to the provisions governing lift placement and compaction. Spoil areas shall be established and restored in accordance with §107-08 *Protection and Restoration of Property and Landscape*. These materials may also be disposed of at a permitted C&D or solid waste management facility.

In Nassau and Suffolk Counties all C&D debris shall be disposed of only in a C&D landfill or processing facility permitted by the NYS Department of Environmental Conservation (NYSDEC). In addition to the requirements of these specifications, no on-site disposal shall take place in these counties without appropriate notice to the Regional Office of the NYSDEC.

Within the Adirondack Park, construction and demolition debris shall only be deposited in accordance with additional requirements of the Adirondack Park Agency.

D. Non-Hazardous Solid Waste. Non-hazardous solid waste includes, but is not limited to: tires, office trash, garbage, roadside litter and street sweepings. The Contractor may collect and store non-hazardous solid waste on the contract site in transfer containers or other appropriate containers pending transportation to a legally permitted solid waste management facility. The Contractor shall meet the following conditions:

- Waste management activities shall be controlled to prevent odors and other nuisance conditions.
- Putrescible solid waste shall be removed when transfer containers are full, or weekly, whichever comes first.
- Non-putrescible solid waste may be collected and stored on the site in a transfer or other appropriate container not longer than 45 days.

E. Non-Hazardous Industrial Waste. Non-hazardous industrial waste includes, but is not limited to: asbestos, pavement marking waste, contaminated soil, empty drums and empty fuel tanks. These wastes require disposal at permitted solid waste management facilities or may be used in applications that have received generic or case-specific beneficial use determinations from NYSDEC. A waste transporter permitted by NYSDEC is required for transport of over 500 pounds of waste in a single load to a disposal facility.

1. Asbestos. Friable and nonfriable asbestos containing materials (ACM) shall only be handled or packaged for transport by a NYS Department of Labor licensed contractor using certified personnel. Friable asbestos waste shall only be transported by a permitted waste transporter under a waste shipment record and disposed of at a permitted waste management facility approved to accept friable asbestos. Non-friable asbestos shall be transported and disposed of as C&D debris.

2. Pavement Marking Wastes. Pavement marking wastes, including millings from the localized removal of only pavement markings and not surface milling, including the pavement material and debris containing the removed markings generated by cleaning and removal operations shall be disposed of as non-hazardous industrial solid waste, at a permitted solid waste management facility, typically a municipal landfill. Pavement marking waste should be collected by typical construction methods such as sweeping and/or vacuuming.

Solid waste management facilities may question whether pavement marking wastes are regulated hazardous wastes because yellow pavement marking products may contain lead and chromium in the pigments. Testing by the Department (toxicity characteristic leaching potential (TCLP)) of yellow pavement marking waste as well as the dried pure paint samples indicated that although it contained lead and chromium, it did not meet the regulatory limit for classification as a hazardous waste and was therefore considered a non-hazardous industrial waste.

3. Contaminated Soil. Soil contaminated with petroleum or other non-hazardous materials shall be disposed of as non-hazardous industrial waste at a permitted solid waste management facility or used in applications that have received generic or case-specific beneficial use determinations from the NYSDEC.

4. Empty Drums or Containers that Previously Held a Known Hazardous Material.

In accordance with 6 NYCRR Part 371.1(h), drums and containers that have had the contents removed by common practices, have less than 1 inch of product residue on the bottom, and less than 3% of the original product are considered “empty” and non-hazardous, even if the material they previously contained would otherwise have been classified as a hazardous waste. This does not apply to drums or containers that held acutely hazardous wastes. Empty drums and containers shall be recycled or disposed of at a permitted waste management facility. Empty containers may be returned to the manufacturer, sent to a reconditioner or handled as scrap metal, cardboard, etc. and are exempt from waste transporter requirements when destined for such reuse.

F. Hazardous Waste. Hazardous wastes are those wastes that are specifically “listed wastes” per 6 NYCRR 371 and/or those that display hazardous wastes characteristics for ignitability, corrosivity, reactivity and/or toxicity.

1. Generator Status. Unless specifically noted otherwise in the contract documents, for all contacts that generate more than 220 pounds of hazardous waste per month, the Contractor shall comply with the regulations governing a Large Quantity Generator.

a. Conditionally Exempt Small Quantity Generator (CESQG). Federal and State hazardous waste regulations classify a CESQG as one that generates less than 220 pounds of hazardous waste per month and stores less than 2,200 pounds of hazardous waste.

b. Small Quantity Generator (SQG). Federal and State hazardous waste regulations classify an SQG as one that generates between 220 and 2,200 lb of hazardous waste per month or stores between 2,200 pounds and 13,200 pounds of hazardous waste.

c. Large Quantity Generator (LQG). Federal and State hazardous waste regulations classify an LQG as one that generates more than 2,200 pounds of hazardous waste per month.

2. Hazardous Waste Handling Requirements. The Contractor shall meet the following hazardous waste requirements:

- a.* Waste shall be properly packaged, with a written description and labeled as hazardous.
- b.* Waste shall be inspected at least weekly while stored on site.
- c.* Waste shall be shipped by a permitted waste transporter with a hazardous waste manifest and required documentation.
- d.* Waste shall be disposed of at a permitted hazardous waste treatment storage and disposal facility (TSDF).
- e.* Waste shall be removed within 90 days after generation, unless a specific contract pay item requires removal sooner.
- f.* Hazardous waste shall be stored on the site of generation until manifested and shipped for disposal. The only exceptions for this are for CESQG wastes which may be temporarily relocated to non-permitted facilities.
- g.* Preparedness and prevention features and contingency planning and emergency procedures shall be developed as per 6 NYCRR 373-3.3 and 373-3.4, respectively.
- h.* Personnel must be trained in hazardous waste management procedures relevant to the positions in which they are employed.
- i.* Appropriate security shall be provided for hazardous wastes while stored on site.

SECTION 210 - REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIAL (BUILDINGS, BRIDGES AND HIGHWAYS)

210-1 DESCRIPTION. This work shall consist of removal and disposal of asbestos- containing material (ACM) from locations designated in the Contract Documents and/or where directed by the Engineer. Additional contract-specific requirements may be found on the plans or in the proposal in a Special Note entitled "Asbestos Remediation Supplemental Requirements."

210-2 MATERIALS. All materials used in the performance of the work shall comply with all applicable regulatory standards. Respirators and filters shall comply with NIOSH and MSHA standards. HEPA filtration systems shall comply with ANSI Z9.2-79.

210-3 CONSTRUCTION DETAILS. Prior to beginning any work under this item, the Contractor shall supply the Engineer with proof that the firm performing the work has a valid asbestos handling license; that its insurance coverage whether provided by the Contractor or the Asbestos Subcontractor, is consistent with §107-06 Insurance and includes an asbestos-specific, occurrence-type policy with no deductible or sunset clause; that its project supervisor is a NYSDOL certified asbestos project supervisor; that all employees engaged in the work are properly certified and have current physical examinations and

respirator fit tests; and that the proper notification of work beginning on the asbestos project has been given to the New York State Department of Labor (NYSDOL) and the United States Environmental Protection Agency (USEPA). The Contractor shall schedule a coordination meeting between the Asbestos Subcontractor and the Department contracted Asbestos Project Monitor to be held at least two (2) weeks before the start of any asbestos abatement work. The meeting shall be held at the Engineer's Field Office unless otherwise approved by the Engineer.

The Contractor shall remove and dispose of ACMs in accordance with 12 NYCRR 56 or, if indicated, an approved variance thereof promulgated by the New York State Department of Labor (NYSDOL); the National Emission Standards for Hazardous Air Pollutants (NESHAP), promulgated by the United States Environmental Protection Agency (USEPA); and the Occupational Safety and Health Administration (OSHA). In the event of a conflict between these specification requirements and laws, rules and regulations of Federal, State, or local agencies, the more restrictive shall apply.

ACM shall be disposed of in accordance with 40 CFR Part 61 and all other requirements and laws, rules, and regulations of applicable Federal, State, or local agencies. Disposal sites which accept ACM for disposal shall be permitted by the New York State Department of Environmental Conservation (NYSDEC). If disposed of out-of-state, the rules, regulations, and laws of that state shall apply.

After the work is completed, the Contractor shall provide the Engineer with two copies of Daily Logs, Visitor Logs, Final Visual Inspection Logs and OSHA Air Monitoring records. The Contractor shall also provide the Engineer with a written certification that the material was disposed of in an approved waste disposal site. For friable waste this certification shall be in the form of a Waste Shipment Record. For non-friable waste this certification shall include the name and address of the waste disposal site or sites used.

210-4 METHOD OF MEASUREMENT. The quantity of ACM to be measured for payment will be determined by one of the following methods:

210-4.01 Square Foot. The quantity to be measured will be the area, measured to the nearest 0.1 square foot, of asbestos-containing material removed and disposed of.

210-4.02 Foot. The quantity to be measured will be the length, measured to the nearest 0.1 foot, of asbestos-containing material removed and disposed of.

210-4.03 Lump Sum. The quantity will be measured for payment on a lump sum basis.

210-4.04 Fixed Price Lump Sum. The lump sum shown in the itemized proposal for this item will be considered the price bid even though payment will be made for the work performed. Should the amount shown be altered, the altered figures will be disregarded and the original price will be used to determine the total contract bid amount. Payments will be based on one or both of the following:

A. Agreed Price. An Agreed Price will be based on a cost analysis submitted by the Contractor and agreed to by the State prior to performing the work. The submittal shall include a detailed estimate from the licensed asbestos removal contractor for the cost of the removal and disposal.

B. Force Account. A separate Force Account will be maintained for the total asbestos removal work performed on each building, structure, or highway included in the work.

210-5 BASIS OF PAYMENT. Payment for the work under this specification shall include all labor, materials, equipment, and asbestos-related fees and insurances necessary to satisfactorily complete the work.

Payment shall not include Work Zone Traffic Control devices outside the regulated asbestos work area.

210-5.01 Square Foot, Foot, or Lump Sum Bid Items. Payment for 75% of the completed quantity will be made upon the Project Monitor's written concurrence with the Contractor's certification as to the following: that the building, structure, and/or highway is visually free of asbestos; that the removal of the asbestos containing material was performed as required; that the final clearance air monitoring results meet the acceptable level specified in 12 NYCRR 56; and, that the building(s), bridge(s), and/or highway(s) are certified by the asbestos Contractor to be available for normal demolition.

The remainder of the payment for completed work will be made upon receipt by the Engineer of a certified statement from the disposal facility, signed by an official thereof, that the asbestos-containing material has been accepted and disposed of in accordance with all applicable laws, codes, rules, and regulations.

210-5.02 Fixed Price Lump Sum. The fixed price lump sum published in the proposal is an amount estimated by the State to be adequate to complete the work. Payments under this work will be made by Force Account or by Agreed Price, or by a combination thereof.

Payment for 75% of the Agreed Price or Force Account charges will be made upon the Project Monitor's written concurrence with the Contractor's certification that the building, structure, and/or highway is visually free of asbestos; the removal of the asbestos containing material was performed as required; that the final clearance air monitoring results meet the acceptable level specified in 12 NYCRR 56; and, that the building(s), bridge(s), and/or highway(s) are certified by the asbestos Contractor to be available for subsequent demolition and/or construction.

The remainder of the payment for completed work will be made upon receipt by the Engineer of a written certification that the ACM was disposed of in an approved waste disposal site.

Asbestos-specific insurance premiums will be reimbursed as the actual and identifiable cost of the portion of the premium attributable to the work performed under the Fixed Price Lump Sum Item. No overhead or profit will be allowed on asbestos specific insurance premiums.

Payment will be made under:

| Item No. | Item | Pay Unit |
|---|---|----------------------|
| Roofing (Buildings) | | |
| 210.1002 | Removal and Disposal of Roofing ACM | Square Foot |
| 210.1003 | Removal and Disposal of Roofing ACM | Lump Sum |
| 210.1004 | Removal and Disposal of Roofing ACM | Fixed Price Lump Sum |
| Siding (Buildings) | | |
| 210.1102 | Removal and Disposal of Siding ACM | Square Foot |
| 210.1103 | Removal and Disposal of Siding ACM | Lump Sum |
| 210.1104 | Removal and Disposal of Siding ACM | Fixed Price Lump Sum |
| Window Caulking and/or Glazing (Buildings) | | |
| 210.1201 | Removal and Disposal of Caulk/Glazing ACM | Foot |
| 210.1203 | Removal and Disposal of Caulk/Glazing ACM | Lump Sum |
| 210.1204 | Removal and Disposal of Caulk/Glazing ACM | Fixed Price Lump Sum |
| Flooring/Mastic (Buildings) | | |

| | | |
|----------|---|----------------------|
| 210.1302 | Removal and Disposal of Flooring/Mastic ACM | Square Foot |
| 210.1303 | Removal and Disposal of Flooring/Mastic ACM | Lump Sum |
| 210.1304 | Removal and Disposal of Flooring/Mastic ACM | Fixed Price Lump Sum |

Ceilings (Buildings)

| | | |
|----------|-------------------------------------|----------------------|
| 210.1402 | Removal and Disposal of Ceiling ACM | Square Foot |
| 210.1403 | Removal and Disposal of Ceiling ACM | Lump Sum |
| 210.1404 | Removal and Disposal of Ceiling ACM | Fixed Price Lump Sum |

Thermal System Insulation (Buildings)

| | | |
|----------|---|----------------------|
| 210.1501 | Removal and Disposal of Thermal System Insulation ACM | Foot |
| 210.1502 | Removal and Disposal of Thermal System Insulation ACM | Square Foot |
| 210.1503 | Removal and Disposal of Thermal System Insulation ACM | Lump Sum |
| 210.1504 | Removal and Disposal of Thermal System Insulation ACM | Fixed Price Lump Sum |

Miscellaneous (Buildings)

| | | |
|------------|---|----------------------|
| 210.2901XX | Removal and Disposal of Miscellaneous ACM | Foot |
| 210.2902XX | Removal and Disposal of Miscellaneous ACM | Square Foot |
| 210.2903XX | Removal and Disposal of Miscellaneous ACM | Lump Sum |
| 210.2904XX | Removal and Disposal of Miscellaneous ACM | Fixed Price Lump Sum |

Concrete Encased Pipe (Bridges & Highways)

| | | |
|----------|--|----------------------|
| 210.3001 | Removal and Disposal of Concrete-Encased Pipe ACM | Foot |
| 210.3003 | Removal and Disposal of Concrete-Encased Pipe ACM | Lump Sum |
| 210.3004 | Removal and Disposal of Concrete-Encased Pipe ACM | Fixed Price Lump Sum |
| 210.3011 | Removal and Disposal of Concrete-Encased Pipe ACM (BV14) | Foot |
| 210.3013 | Removal and Disposal of Concrete-Encased Pipe ACM (BV14) | Lump Sum |
| 210.3014 | Removal and Disposal of Concrete-Encased Pipe ACM (BV14) | Fixed Price Lump Sum |

Underground Pipe (Bridges & Highways)

| | | |
|----------|---|----------------------|
| 210.3101 | Removal and Disposal of Underground Pipe ACM | Foot |
| 210.3103 | Removal and Disposal of Underground Pipe ACM | Lump Sum |
| 210.3104 | Removal and Disposal of Underground Pipe ACM | Fixed Price Lump Sum |
| 210.3111 | Removal and Disposal of Underground Pipe ACM (BV14) | Foot |
| 210.3113 | Removal and Disposal of Underground Pipe ACM (BV14) | Lump Sum |
| 210.3114 | Removal and Disposal of Underground Pipe ACM (BV14) | Fixed Price Lump Sum |

Suspended Pipe (Bridges & Highways)

| | | |
|----------|---|----------------------|
| 210.3201 | Removal and Disposal of Suspended Pipe ACM | Foot |
| 210.3203 | Removal and Disposal of Suspended Pipe ACM | Lump Sum |
| 210.3204 | Removal and Disposal of Suspended Pipe ACM | Fixed Price Lump Sum |
| 210.3211 | Removal and Disposal of Suspended Pipe ACM (BV14) | Foot |
| 210.3213 | Removal and Disposal of Suspended Pipe ACM (BV14) | Lump Sum |
| 210.3214 | Removal and Disposal of Suspended Pipe ACM (BV14) | Fixed Price Lump Sum |

Bond Breaker/Filler (Bridges & Highways)

| | | |
|----------|--|----------------------|
| 210.3302 | Removal and Disposal of Bond Breaker/Filler ACM | Square Foot |
| 210.3303 | Removal and Disposal of Bond Breaker/Filler ACM | Lump Sum |
| 210.3304 | Removal and Disposal of Bond Breaker/Filler ACM | Fixed Price Lump Sum |
| 210.3312 | Removal and Disposal of Bond Breaker/Filler ACM (BV14) | Square Foot |
| 210.3313 | Removal and Disposal of Bond Breaker/Filler ACM (BV14) | Lump Sum |
| 210.3314 | Removal and Disposal of Bond Breaker/Filler ACM (BV14) | Fixed Price Lump Sum |

Caulking (Bridges & Highways)

| | | |
|----------|---|----------------------|
| 210.3401 | Removal and Disposal of Caulking ACM | Foot |
| 210.3403 | Removal and Disposal of Caulking ACM | Lump Sum |
| 210.3404 | Removal and Disposal of Caulking ACM | Fixed Price Lump Sum |
| 210.3411 | Removal and Disposal of Caulking ACM (BV14) | Foot |
| 210.3413 | Removal and Disposal of Caulking ACM (BV14) | Lump Sum |
| 210.3414 | Removal and Disposal of Caulking ACM (BV14) | Fixed Price Lump Sum |

Miscellaneous (Bridges & Highways)

| | | |
|------------|--|----------------------|
| 210.4801XX | Removal and Disposal of Miscellaneous ACM | Foot |
| 210.4802XX | Removal and Disposal of Miscellaneous ACM | Square Foot |
| 210.4803XX | Removal and Disposal of Miscellaneous ACM | Lump Sum |
| 210.4804XX | Removal and Disposal of Miscellaneous ACM | Fixed Price Lump Sum |
| 210.4811XX | Removal and Disposal of Miscellaneous ACM (BV14) | Foot |
| 210.4812XX | Removal and Disposal of Miscellaneous ACM (BV14) | Square Foot |
| 210.4813XX | Removal and Disposal of Miscellaneous ACM (BV14) | Lump Sum |
| 210.4814XX | Removal and Disposal of Miscellaneous ACM (BV14) | Fixed Price Lump Sum |

Item Number Codes

210.xxyzXX

where xx equals Category

10-28 Buildings, 29 Miscellaneous (Buildings)

30-47 Bridges and Highways, 48 Miscellaneous (Bridges and Highways)

where y equals BV

1-9 In order of listing within the category, 0 No BV

where z equals Payment Method

1=Foot, 2=Square Foot, 3=Lump Sum, 4=Fixed Price Lump Sum

where XX denotes serialization (applicable to only miscellaneous items)

SECTION 570 - PAINT REMOVAL OPERATIONS

570-1 DESCRIPTION. This work shall consist of providing environmental protection and developing and implementing a worker Lead Health Safety program during paint removal operations.

Whenever a structure spans over a railroad, covers shall be placed and maintained in accordance with §105-09 Work Affecting Railroads. Structures that span a navigable waterway may be subject to regulation by various agencies.

570-1.01 Lead-Exposure Control Plan (LECP). This work shall consist of the development and implementation of a Lead Exposure Control Plan to protect workers from the harmful effects of lead exposure in accordance with 29 CFR Subpart D. Work activities which may expose workers to health hazards include, but are not limited to abrasive blasting, paint removal, torch-cutting, welding, grinding, and rivet busting.

570-1.02 Medical Testing. This work shall consist of medical testing to monitor the safety of workers with lead exposures.

570-1.03 Personal-Exposure-Monitoring Sample Analysis. This work shall consist of monitoring the exposure levels of workers to define the hazard and/or to verify the effectiveness of control measures.

570-1.04 Decontamination Facilities. This work shall consist of installation, operation, maintenance, and cleaning of decontamination facilities for personnel with lead exposures.

570-1.05 Environmental Ground Protection. This work shall consist of the collection and removal of waste materials, including old paint chips, corrosion residues, spent abrasives, and newly applied paint that result from cleaning and painting operations as specified in the contract documents or as directed by the Engineer.

570-1.06 Environmental Water Protection. This work shall consist of the collection and removal of waste materials, including paint chips, corrosion residues, spent abrasives and newly applied paint that result from cleaning and painting operations as specified in the contract documents or as directed by the Engineer.

570-1.07 Class B Containment. This work shall consist of furnishing, installing, and removing a containment enclosure around the work area used to contain and collect debris generated during paint removal and surface preparation using vacuum shrouded power tools, vacuum blasters, and hand tools. Open abrasive blasting shall not be conducted in a Class B containment.

570-1.08 Class A Containment. This work shall consist of furnishing, installing, and removing a total containment enclosure around the immediate work area to contain and collect debris generated during paint removal and surface preparation operations as specified in the contract documents or as directed by the Engineer.

570-2 MATERIALS. A high-efficiency particulate air (HEPA) filter shall be defined as a filter that is at least 99.97% efficient against particles that are 0.3µm in diameter.

570-3 CONSTRUCTION DETAILS

570-3.01 Lead-Exposure Control Plan (LECP). At least 20 calendar days prior to starting any work which could entail employee exposure to lead, the Contractor shall submit two copies of a written Lead-Exposure Control Plan (LECP) to the Engineer for review and acceptance. This LECP shall address all of the elements required by 29 CFR Subpart D and shall be coordinated with, and need not be repeated in, the site-specific Health and Safety Plan. The Contractor shall not begin any work which could entail lead exposure until the LECP has been accepted by the Engineer.

Submission of the LECP and its acceptance by the Engineer shall not be construed to imply approval of any particular method for addressing lead health and safety concerns, or to relieve the Contractor of the responsibility for adequately protecting the health and safety of all workers.

A competent person shall have current training as SSPC C-3, Competent Person Training for Deleading of Industrial Structures, or the SSPC C-5 refresher training class.

A. Industrial Hygienist. Where required, the Contractor shall engage an Industrial Hygienist (IH) meeting one or more of the following qualifications:

- Current certification by the American Board of Industrial Hygiene.
- A Bachelor's Degree in engineering, chemistry, physics, biological sciences, industrial hygiene, toxicology, the environmental sciences or a related field, and at least three years of documented full-time work as an IH, including field and sampling experience.

- A Master's Degree in one of the above fields, and at least two years of documented full-time work as an IH, including field and sampling experience.

The IH shall have the following responsibilities:

- Development of a written LECP, LECP updates, and preparation of monthly summary reports.
- Provide general oversight of all aspects of the LECP.
- Review all employee medical tests and exposure monitoring results. If required, take corrective actions.
- Intervention by the IH, consisting of an on-site investigation by the IH, implementation of corrective action, and notification of the Engineer in the next monthly report if either of the following conditions are encountered:
 - Blood Lead Level (BLL) > 40 µg/dL (micrograms/deciliter) for one or more workers.
 - BLL increase of 10 µg/dL or more between successive tests for any individual worker.
- Inspect the work site at least monthly during work which produces a potential lead exposure, except where the Contractor documents that employee lead exposure will be below the Permissible Exposure Limit (PEL).

B. Exposure Below the Action Level. If the Contractor can document by air monitoring or the use of appropriate historical data that lead exposure for all employees will be below the Action Level ($\mu\text{g}/\text{m}^3$), then the Contractor shall develop a written LECP including, but not limited to the following:

- A description of the Contractor's lead health and safety organization, including the responsibilities and qualifications of the competent person, and the project Health and Safety Officer.
- A description of OSHA required lead training provided to both supervisors and workers.
- A description of each activity which will entail a risk for lead exposure.
- An initial assessment of anticipated exposure level(s), including any relevant historical exposure monitoring data.
- A description of arrangements for ensuring that Subcontractors will comply with the LECP.
- Plans for updating the LECP.
- Plans for keeping and maintaining records.
- Exposure monitoring.

C. Exposure Above the Action Level and Below the Permissible Exposure Limit. If the Contractor can document by air monitoring or the use of appropriate historical data that the highest employee lead exposure will be above the Action Level ($30 \mu\text{g}/\text{m}^3$), but below the Permissible Exposure Limit ($50 \mu\text{g}/\text{m}^3$), then the Contractor shall develop a written LECP under the direction of an IH, with day-to-day supervision by the competent person, including, but not limited to, the items listed under paragraph B above and the following:

- Medical surveillance and removal program.
- Notifying employees and the Engineer of the results of exposure monitoring and medical tests.
- Worker and supervisor training.
- Monthly summary reports.
- Plans for worker and supervisor lead training.
- Plans for performing exposure monitoring and for notifying employees and the Engineer of results.

- A description of the Contractor's medical surveillance and removal program, including plans for notifying employees and the Engineer of results. This description shall include the names and addresses of the clinic(s) where testing will be performed and of the OSHA-approved laboratory where blood samples will be analyzed.

D. Exposure At or Above the Permissible Exposure Limit. When the highest employee lead exposure will be above the Permissible Exposure Limit ($50 \mu\text{g}/\text{m}^3$), the Contractor shall develop a written LECP under the direction of an IH, with day-to-day supervision by the competent person. The LECP shall include, but not be limited to, the items listed under paragraphs B and C above and the following:

- A description of the engineering, administrative, and work practice controls which will be used to reduce exposure. All feasible engineering, administrative, and work practice controls shall be implemented before considering the use of respirators to reduce exposure.
- Decontamination facilities to be provided including a description and floor plan, a description of any hand-wash stations to be provided, and a description of mandatory hygiene practices which employees will be required to follow.
- A description of a Respirator Program including respirator-fit testing and respirator training.
- A description of Provision of Personal Protective Equipment (PPE), including required cleaning and/or replacement.
- Plans for posting and maintenance of warning signs in high-exposure areas.
- Schedule of periodic work site inspections by the IH and the competent person.

E. Monthly Summary Reports. Except where the Contractor can document that employee lead exposure will be below the Action Level, for each month of work which entails potential lead exposure, the Contractor shall submit a monthly summary report to the Engineer which has been reviewed and signed by the IH not later than the 15th of the following month. This report shall contain the following elements:

1. A summary of the work producing potential lead exposure completed in the past month.
2. A description of any interventions or deficiencies noted, and a summary of corrective actions.
3. A summary of exposure monitoring or medical testing results which were completed in the past month. To protect worker privacy, these results shall not include individual names; instead, workers shall be identified by trade and with an individual control number (not Social Security Number) to allow tracking of their exposure.
4. A certification that, with the exception of any deficiencies noted, the past month's work has been in compliance with the requirements of 29 CFR 1926.62 and this specification.

570-3.02 Medical Testing. The Contractor shall arrange for employees to receive all required medical tests. All medical tests shall be completed by, or under the supervision of, a licensed physician. Blood sampling and analysis shall meet the accuracy requirements of 29 CFR Subpart D and shall be conducted by an OSHA-approved laboratory. The Contractor shall provide the Engineer a summary of medical testing results which were completed in the past month prior to a request for payment. The Contractor shall provide documentation of any medical removals, a description of what triggered them, and the corrective measures taken. The Contractor shall provide an exit medical exam consisting of blood sampling and analysis for lead and zinc protoporphyrin (ZPP) levels for all workers who were potentially exposed within 5 work days of the time a worker completes or is removed from all work which entails a potential for lead exposure. Exit exams shall also be offered within 5 work days of seasonal shutdown or for other periods exceeding 30 calendar days in which no work involving potential lead exposure is

scheduled or anticipated. The results of all medical tests shall be provided to affected workers within 5 work days of receipt, and to the Engineer in the next monthly report.

For employees who are offered an exam but choose not to participate or fail to respond, the Contractor shall provide a written declination signed by the worker or, for workers who are no longer on the payroll, a registered letter to the worker's last known address.

570-3.03 Personal-Exposure-Monitoring Sample Analysis. The Contractor shall conduct exposure monitoring. Exposure monitoring samples shall be obtained by the IH, a competent person under the direction of the IH, or other qualified persons as specified in the LECP. Exposure monitoring samples shall be analyzed by a laboratory selected by the Contractor, using a method which meets the accuracy requirements of 29 CFR Subpart D. The Contractor shall provide the Engineer a summary of exposure monitoring sample test results which were completed in the past month prior to a request for payment.

570-3.04 Decontamination Facilities. Except where the Contractor can document that employee lead exposure will be below the PEL, a minimum of one climate-controlled decontamination facility shall be provided, and shall be utilized by all workers with potential lead exposure. The number of facilities to be provided will be dictated by site conditions and by the Contractor's sequence of operations and shall be approved by the IH and the Engineer.

Each facility shall consist of a "clean" area where workers can remove and store their street clothing when they arrive on site; a shower room with hot and cold running water, soap and clean towels; and a "dirty" area where workers can remove and store their work clothing and PPE at the end of their work shift. The "clean" area and the "dirty" area shall each have a separate entrance. Decontamination facilities shall be cleaned as required, or at least once every week of use. All waste water generated from showers or as a result of cleaning operations shall either be tested and filtered through a 5 μ m filter or considered as lead contaminated, and disposed of in accordance with State and Federal regulations.

570-3.05 Environmental Ground Protection.

A. General. Covers shall be provided on or over the ground under all structures that are to be cleaned and painted. Depositing or dropping waste materials into water and onto the ground or roadways outside the specified collection areas is not permitted.

The length of the cover shall be 10 feet longer on each end than the length of the work area, and the width shall be at least 10 feet wider on each side of the work area. The cover shall be positioned in such a manner as to contain and prevent the loss of waste materials.

Environmental Ground Protection shall consist of covers or other material capable of catching and holding waste materials on or over the ground under the structure in the work area. A bridge deck or a highway pavement and paved shoulder under a structure from which wastes may be collected and removed by vacuuming may be used in place of a cover providing that within that area such usage is confined to lanes and shoulders closed to traffic.

Covers on or over roadways or railroads or sidewalks or other similar areas shall not present a hazard of any kind and no cover shall remain in place overnight unless otherwise authorized by the Engineer.

B. Containment Operations. Cleaning or painting operations shall not be performed when the direction or velocity of prevailing winds causes waste materials to fall outside the collection area. If wind or other factors prevent collection, the Contractor may, with the approval of the Engineer, use drapes or other means to prevent drift beyond all specified collection areas.

C. Waste Collection. All waste materials shall be removed from the ground protection by vacuuming. Sweeping, shoveling, or other mechanical means to remove the waste materials from the

ground protection is not permitted. Air exhausted from vacuuming equipment shall pass through a HEPA filtering system.

All waste materials that collect on a bridge deck, or on a highway pavement and paved shoulder under a structure or on covers shall be removed at least once a day or more frequently if directed by the Engineer. No waste material shall remain on the bridge deck, pavement, pier, pedestals, abutments, or containment covers overnight.

570-3.06 Environmental Waterway Protection.

A. General. Covers shall be provided under all structures that span bodies of water, waterways, and stream beds, and that are to be cleaned and painted in the field. Depositing or dropping waste materials into water and onto the ground or roadways outside the specified collection areas is not permitted.

A cover shall be suspended from the structure and shall, as measured over the water, be at least 10 feet greater in length and at least 10 feet wider than each side of the area on which work is underway. The cover shall be positioned in a manner so as to collect and prevent the loss of waste materials. The cover shall not remain in place overnight if it presents a hazard of any kind.

If floating waste materials form on the water surface, they shall be contained from moving upstream or downstream. Floating waste material shall be collected daily, or more frequently. Straw or screening used in the fabrication of water booms shall be replaced with clean material weekly or as otherwise directed by the Engineer.

B. Containment Operations. Cleaning or painting operations shall not be performed when the direction or velocity of prevailing winds causes waste materials to fall outside the collection area. If wind or other factors prevent collection the Contractor may, with the approval of the Engineer, use drapes or other means to prevent drift beyond all specified collection areas.

C. Waste Collection. All waste materials shall be removed from the waterway protection by vacuuming. Sweeping, shoveling, or other mechanical means to remove the waste materials from the waterway protection is not permitted. Air exhausted from vacuuming equipment shall pass through a HEPA filtering system.

All waste materials that collect on a bridge deck, or on a highway pavement and paved shoulder under a structure or on covers shall be removed at least once a day or more frequently if directed by the Engineer. No waste material shall remain on the bridge deck, pavement, pier, pedestals, abutments, or containment covers overnight.

570-3.07 Class B Containment.

A. General. The containment system includes the cover panels, screens, tarps, scaffolds, supports, and shrouds used to enclose an entire work area. The purpose of the containment is to prevent debris generated during surface preparation from entering the environment and to facilitate the controlled collection of the debris for disposal.

The containment shall meet the requirements of SSPC-Guide 6, Class 2P. The containment may have either air penetrable or impenetrable walls, rigid or flexible framing, shall have fully sealed joints, and shall have overlapping entry ways. Flexible covers for flooring shall be impermeable and will be allowed only if the ground or paved surfaces are smooth enough to vacuum debris. If a smooth surface is not available, rigid materials shall be used for the floor of the enclosure.

B. Containment Operations. All cleaning and paint removal work and all work associated with the collection of paint waste debris, including the subsequent air blow-down or vacuuming of debris

from the steel surfaces on the structure in preparation for painting, shall be performed inside the containment enclosure.

The Contractor shall make every attempt to limit workers from entering or exiting the containment enclosure when paint removal operations are being performed.

C. Waste Collection. Following paint removal work, all steel surfaces inside containment shall be vacuumed of debris. All waste material that results from paint removal operations shall be cleaned up and collected from the floor, walls, and other surfaces inside of the containment enclosure by vacuuming. Sweeping, shoveling, or other mechanical means to remove the waste materials will not be allowed. Cleanup operations shall be performed daily, prior to inspection, before new paint is applied or before a prolonged work stoppage, such as for weather interruptions.

Prior to disassembly or moving of the containment enclosure, the inside surfaces of the enclosure shall be cleaned of dust and other spent material by vacuuming. The Contractor shall take all measures necessary to prevent the release of waste material during moving or removal of the containment.

All vacuum equipment that is used for collection and clean up work shall be equipped with HEPA filters. All used filters from dust collectors, vacuums, and straw and screening from dam devices, shall be disposed of in accordance with all applicable local, State, and Federal Laws, regulations, and codes. The cost for disposing of these materials shall be included in the lump sum price bid for this item.

D. Ventilation. Ventilation inside the enclosure is not specifically required and may be by natural means. It may be necessary to provide mechanical ventilation to meet OSHA requirements for worker exposure to lead and other provisions. If mechanical ventilation is provided to address these requirements, filtration of exit air is not required.

E. Lighting. Light intensity by natural or artificial means inside the containment enclosure shall be maintained at a minimum of 50 foot-candles on the steel surface. During inspection activities, light shall be maintained at a minimum of 100 foot-candles. Auxiliary lighting shall be provided as necessary. The Contractor shall provide the Engineer with one portable light meter with a scale of 0 to 100 foot-candles. This meter will be returned to the Contractor at the completion of work. All lighting used in the containment shall be explosion-proof.

F. Containment Performance. The effectiveness of the containment enclosure shall be determined by visual inspection for dust plumes or other visible evidence of emissions materials into the environment. Throughout the duration of work there shall be no visible discharges. If there is a visible discharge the Contractor shall immediately stop work and perform necessary repairs to the containment enclosure or modifications to cleaning operations to the Engineer's satisfaction.

The Engineer may direct the Contractor to stop all work activities and immediately clean up all waste materials within the enclosure when threatening weather conditions exist or are predicted. This measure may be exercised when an apparent threat exists that could cause the release of waste material to the surrounding environment, such as high winds or heavy rain.

If the wind velocity causes the containment enclosure to billow, or to emit dust, or to otherwise be a hazard in the opinion of the Engineer, the Contractor shall immediately cease work and clean up all the debris. Under severe conditions the Contractor shall disassemble the containment enclosure.

G. Releases From the Containment. For structures that are located over or adjacent to water, if floating waste materials form on the water surface, they shall be contained from moving upstream or downstream by the use of floating water booms. Floating waste material shall be collected daily, or more frequently.

Any waste material that is released outside the containment enclosure shall be immediately cleaned up using vacuums. Care shall be taken on pavement and other surfaces to collect all waste material so as to prevent it from being redistributed into the air and environment by traffic or other means.

All used filters from dust collectors, vacuums, and straw and screening from dam devices, shall be disposed of in accordance with all applicable Local, State, and Federal Laws, regulations and codes. The cost for disposing of these materials shall be included in the lump sum price bid for this item.

570-3.08 Class A Containment. Fifteen (15) days prior to the start of any abrasive-blast cleaning or paint removal work, the Contractor shall submit for approval detailed working drawing(s) of the Class A containment system that is to be supplied for each structure. The drawings shall be prepared and stamped by a Professional Engineer. Six (6) complete copies of the working drawings shall be submitted for approval.

The working drawings shall detail the proposed containment enclosure and include the following information at a minimum:

- Plan and elevation of the containment enclosure in relation to the structure.
- The type of solid or rigid floor and working platform with appropriate safety and fall protection measures. A description of worker access to the enclosure and the procedures and equipment that will be used to provide fall-protection. If a barge or another type of floating platform is used, include details regarding its construction, such as materials and dimensions, how the platform will be tied-off, how the debris will be collected and off-loaded, etc.
- A description of how the existing drainage will be routed through the enclosure.
- A description of the type of material(s) for the containment walls, floor, and ceiling.
- The type of support structure that will be used for the floor, walls, and ceiling, including the attachment of the enclosure materials to the support structure.
- The method by which the enclosure will be supported or attached to the bridge, i.e., rollers, clamps. Welding, bolting, or similar connections will not be allowed.
- The method that will be used to seal the joints (seams) formed when fabricating the containment enclosure, and the method that will be used to seal the mating joints between the containment enclosure and the bridge structure.
- The method that will be used to seal the entryway. At a minimum, the use of multiple overlapping door tarps shall be provided to minimize dust escape through the entryway.
- The ventilation system including open-air make-up points, dust collector and exhaust fan(s), location, type of equipment, manufacturer's data sheets, and airflow capacities.
- The type, size, and configuration of auxiliary lighting provided inside the containment enclosure. All lighting must be explosion proof.
- A design analysis of the loads on the structure due to the containment enclosure including: maximum dead and live loads of the enclosure, the workers, blast abrasive, and equipment; maximum allowable load for the floor and working platform; wind loads imposed on the structure by the enclosure; and maximum wind velocity that the containment enclosure is designed to withstand.
- If the containment system is supported by the structure, the working drawing submittal shall include certification by the Professional Engineer that the loads imposed do not cause the overall stress level of any element of the bridge to exceed the Operating Rating Allowable Stresses defined in AASHTO Manual for Maintenance Inspection of Bridges.
- The analysis shall account for all loads on the structure, including the enclosure dead load, worker live load, blast-abrasive load, equipment load, wind load, structure dead load, and highway live load using H20 loading unless otherwise specified plus impact. The highway live load used for analysis purposes shall be either an HS20 truck or equivalent lane loading, whichever is greater, unless a

different highway live load is shown in the contract documents. Except as noted, the analysis shall use the loadings and design assumptions in the NYSDOT Standard Specifications for Highway Bridges.

- Details on how the enclosure is assembled, disassembled and moved to a new location on the structure as surface preparation work progresses. Indicate how the dust collector will be included in the containment enclosure. All other pertinent details relating to the containment enclosure shall be included with the working drawings as notes or as written narrative.
- Details on how the use of the enclosure will be coordinated with the Work Zone Traffic Control. Encroachments onto roadways and clearances over waterways and railroads shall be clearly identified.

A. General. The containment system includes the cover panels, screens, tarps, scaffolds, supports, and shrouds used to enclose an entire work area. The purpose of the containment is to prevent all debris generated during surface preparation from entering the environment and to facilitate the controlled collection of the debris for disposal.

The containment shall meet the requirements of SSPC-Guide 6, Class 1A. The containment shall have air impenetrable-walls, rigid or flexible framing, fully sealed joints, and resealable entry ways. Negative air shall be achieved by forced air flow. Exhaust air shall be filtered.

Flexible covers for flooring shall be impermeable and will be allowed only if the ground or paved surfaces are smooth enough to vacuum debris. If a smooth surface is not available, rigid materials shall be used for the floor of the enclosure.

B. Containment Operations. All abrasive-blast cleaning and paint removal work, and all work associated with the collection of paint waste debris, including the subsequent air blow-down or vacuuming of debris from the steel surfaces on the structure in preparation for painting and inspection, shall be performed inside the containment enclosure.

The Contractor shall attempt to limit workers from entering or exiting the containment enclosure when blast cleaning and paint removal operations are being performed.

C. Waste Collection. All waste material that results from abrasive blasting and paint removal operations shall be cleaned up and collected from the floor, walls, and other surfaces inside of the containment enclosure by vacuuming. Sweeping, shoveling, or other mechanical means to remove the waste materials will not be allowed unless the containment is intact and the vacuuming system is operating. Clean up operations shall be performed daily, prior to inspection, before new paint is applied or before a prolonged work stoppage, such as for weather interruptions.

Prior to disassembly or moving of the paint enclosure, the inside surfaces of the enclosure (walls, floors, ceiling, etc.) shall be cleaned of dust and other spent material by vacuuming. The Contractor shall take all measures necessary to prevent the release of waste material during moving or removal of the containment.

All vacuum equipment that is used for collection and cleanup work shall be equipped with HEPA filters. All used filters from dust collectors, vacuums, and straw and screening from dam devices, shall be disposed of in accordance with all applicable local, State, and Federal Laws, regulations, and codes. The cost for disposing of these materials shall be included in the lump sum price bid for this item.

D. Ventilation. The size of the exhaust-fan system supplied shall be designed to produce an average minimum cross-draft air velocity or an average minimum downdraft air velocity inside the containment enclosure. For enclosures designed with horizontal air flow, the exhaust fan shall have the capacity to produce an average minimum cross-draft velocity of 100 fpm, based on theoretical calculations. For enclosures designed with vertical air flow, the exhaust fan shall have the capacity to produce an average minimum downdraft velocity of 50 fpm, based on theoretical calculations.

Forced exhaust air shall flow into dust collectors. The dust collectors shall be used and appropriately sized for the type, size of particulate matter, volume, and velocity of air moved through the containment. All air exhausted from the containment enclosure shall pass through the dust collection system.

Proper operation of the ventilation system shall be maintained after each assembly of the containment and during all phases of work.

E. Lighting. Light intensity by natural or artificial means inside the containment enclosure shall be maintained at a minimum of 50 foot-candles on the steel surface. During inspection activities, light shall be maintained at a minimum of 100 foot-candles. Auxiliary lighting shall be provided as necessary. The Contractor shall provide the Engineer with one portable light meter with a scale of 0 to 100 foot-candles. This meter will be returned to the Contractor at the completion of work. All lighting used in the containment shall be explosion-proof.

F. Containment Performance. NYSDOT will perform air quality monitoring (AQM) for ambient particulate and lead during abrasive blasting/cleanup. Real-time AQM will be used for all Class A containments. High-volume AQM may be used in addition to real-time AQM. The effectiveness of the containment and accessory equipment in preventing unacceptable levels of particulate and lead emissions will be assessed based on established AQM criteria for both the real-time and high-volume monitoring. Throughout the duration of work, there shall be no visible discharges. If the Engineer observes a visible discharge, the Contractor shall immediately stop work and perform necessary repairs to the containment enclosure or modifications to blast cleaning operations to the Engineer's satisfaction.

The Engineer may direct the Contractor to stop all work activities and require the Contractor to immediately clean up all waste materials within the enclosure when severe weather conditions exist or are predicted. This measure may be exercised when an apparent threat exists that could cause the release of waste material to the surrounding environment, such as high winds or heavy rain.

If the wind velocity causes the containment enclosure to billow or to emit dust, or to otherwise be a hazard in the opinion of the Engineer, the Contractor shall immediately cease work and cleanup all the debris. If severe conditions are predicted, the Contractor shall disassemble the containment enclosure.

G. Releases From the Containment. For structures that are located over or adjacent to water, if floating waste materials form on the water surface, they shall be contained from moving upstream or downstream by the use of floating water booms. Floating waste material shall be collected daily, or more frequently.

Any waste material that is released outside the containment enclosure shall be immediately cleaned up using vacuums. Care shall be taken on pavement and other surfaces to collect all waste material so as to prevent it from being redistributed into the air and environment by traffic or other means.

All used filters from dust collectors, vacuums, and straw and screening from dam devices, shall be disposed of in accordance with all applicable Local, State, and Federal Laws, regulations and codes. The cost for disposing of these materials shall be included in the lump sum price bid for this item.

570-4 METHOD OF MEASUREMENT.

570-4.01 Lead-Exposure Control Plan (LECP). The work under the Lead Exposure Control Plan will be measured for payment on a lump sum basis.

570-4.02 Medical Testing. The work under medical testing will be measured for payment on a dollars-cents basis.

The amount shown in the itemized proposal for this work will be considered the price bid even though payment will be made for actual work performed. This amount is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figure will be disregarded, and the original price will be used to determine the total amount bid.

570-4.03 Personal-Exposure-Monitoring Sample Analysis. The work under the personal exposure monitoring sample analysis will be measured for payment on a dollars-cents basis.

The amount shown in the itemized proposal for this work will be considered the price bid even though payment will be made for actual work performed. This amount is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figure will be disregarded, and the original price will be used to determine the total amount bid.

570-4.04 Decontamination Facilities. The quantity to be measured for payment will be in calendar weeks.

570-4.05 Environmental Ground Protection. This work will be measured for payment on a lump sum basis.

570-4.06 Environmental Water Protection. This work will be measured for payment on a lump sum basis.

570-4.07 Class B Containment. This work will be measured for payment on a lump sum basis.

570-4.08 Class A Containment. This work will be measured for payment on a lump sum basis.

570-5 BASIS OF PAYMENT.

570-5.01 Lead-Exposure Control Plan (LECP). The lump sum price bid shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work.

570-5.02 Medical Testing. Payment shall include all reasonable and customary costs incurred (based on receipted bills submitted to the Engineer, plus 5% overhead and profit).

No payments shall be made for additional medical tests or laboratory analyses required due to an increase in the blood lead level of any employee above the OSHA threshold.

570-5.03 Personal-Exposure-Monitoring Sample Analysis. Payment shall include all reasonable and customary costs incurred (based on receipted bills submitted to the Engineer, plus 5% overhead and profit), for laboratory analysis of exposure monitoring samples.

570-5.04 Decontamination Facilities. The unit price bid per week for each facility shall include the cost of all labor, materials, equipment, utility, and disposal charges necessary to satisfactorily complete the work.

570-5.05 Environmental Ground Protection. The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work.

570-5.06 Environmental Water Protection. The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work.

570-5.07 Class B Containment. The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work.

Progress payments will be made based upon the amount of work completed using a daily rate of payment determined from the estimate of work days of cleaning and painting shown in the Contractor's approved progress schedule and the lump sum price bid.

Should the Engineer request a revised progress schedule and use that schedule to establish a new daily rate, the lump sum price bid shall be reduced by the total of the amounts previously authorized for payment, prior to the establishment of the new daily rate.

570-5.08 Class A Containment. The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work.

Progress payments will be made based upon the amount of work completed using a daily rate of payment determined from the estimate of work days of cleaning and painting shown in the Contractor's approved progress schedule and the lump sum price bid.

Should the Engineer request a revised progress schedule and use that schedule to establish a new daily rate, the lump sum price bid shall be reduced by the total of the amounts previously authorized for payment, prior to the establishment of the new daily rate.

No payment will be made for each calendar day during which there are substantial deficiencies. Substantial deficiencies are defined as: (1) The second occurrence of a visible emission for a cause which has been previously identified and corrected, or (2) air quality monitoring produces unacceptable results as defined in the Department's Air Quality Monitoring (AQM) Protocols.

The nonpayment will be calculated as follows:

$$(\text{Lump Sum Price Bid/Actual \# of Work Days}) \times (\text{\# of Days with Substantial Deficiencies})$$

In addition to the non payment for substantial deficiencies, the costs of any extension of the Air Quality Monitoring beyond the basic monitoring program or random audits defined in the AQM Protocol, which are necessitated by unacceptable AQM results, will also be charged to the Contractor.

Both of these amounts will be deducted from monies due to the Contractor.

Payment will be made under:

| Item No. | Item | Pay Unit |
|-----------------|--|---------------------------|
| 570.01 | Lead-Exposure Control Plan | Lump Sum |
| 570.02 | Medical Testing | Dollars-Cents |
| 570.03 | Personal-Exposure-Monitoring Sample Analysis | Dollars-Cents |
| 570.04 | Decontamination Facilities | Calendar Week |
| 570.09nnnn | Environmental Ground Protection | Lump Sum (each structure) |
| 570.10nnnn | Environmental Waterway Protection | Lump Sum (each structure) |
| 570.15nnnn | Class A Containment | Lump Sum (each structure) |
| 570.16nnnn | Class B Containment | Lump Sum (each structure) |

NOTE: nnnn denotes serialized pay item.

SECTION 571 - TREATMENT AND DISPOSAL OF PAINT REMOVAL WASTE

571-1 DESCRIPTION. The work shall consist of accumulating, packaging, labeling, loading, transporting, treating, and disposing paint removal waste declared to be a hazardous waste containing lead.

571-1.01 Hazardous Waste Disposal Facility. Prior to generating any paint removal waste, the Contractor shall supply the Engineer with a letter from a legally permitted Hazardous Waste Disposal Facility, stating that the Facility has agreed to accept the paint removal waste generated by the work requirements of this project; is authorized to accept paint removal waste under the laws of the State of residence; has the required capacity to treat and dispose of the material; and will provide, or assure the ultimate disposal method indicated on the Uniform Hazardous Waste Manifest. The letter shall be signed by a representative of the Disposal Facility who is legally authorized to sign such an agreement. The Engineer shall be given an original, signed letter. Facsimile copies will not be acceptable.

571-1.02 Waste Transporter. The Contractor shall present evidence that they have a 6NYCRR Part 364 Waste Transporter Permit to haul to the selected facility, or have contracted with a permitted Hazardous Waste Transporter to remove the waste to the selected facility.

571-1.03 Paint Removal Waste. For purposes of this item, paint removal waste is defined as removed paint particles combined with any material used to remove the paint. Paint removal waste will

be referred to throughout the item text as 'waste'. Declaration of the waste as 'hazardous' is based on the Department's knowledge that the waste contains lead.

571-1.04 Waste Transport. All waste resulting from paint removal operations shall be in transit to the disposal site no later than 45 calendar days subsequent to 1 ton of waste accumulated at the site, or two weeks following demobilization of the site, whichever occurs first. Waste shall be accumulated, handled, packaged, loaded, transported, treated and disposed in accordance with all applicable Federal, State and local laws, rules, regulations, and codes. The Contractor's failure to comply with the aforementioned deadlines may result in the actions described under §571-5 Basis of Payment.

571-1.05 Minimum Work Requirements. The Contractor is hereby notified that this work requires the following as a minimum:

Waste transporter identification number issued by USEPA.

Disposal facility identification number issued by USEPA. (This will be supplied by the Disposal Facility).

Generator site identification number issued by USEPA. (This will be supplied by the State through the Engineer).

Conformance to 6NYCRR364. Part 364 governs waste transporters. The Contractor shall furnish a copy of the Part 364 permit to the Engineer.

Conformance to 6NYCRR372. Part 372 governs manifest requirements.

Conformance to 6NYCRR373. Part 373 governs treatment, storage and disposal facilities and contains specific generator requirements.

Conformance to 40 CFR 268 promulgated by the Environmental Protection Agency pursuant to the Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act. That law prohibits the land disposal of hazardous wastes unless they are treated to diminish the toxicity of the migration of hazardous constituents from the waste.

NOTE: NYCRR regulations are administered by the NYS Department of Environmental Conservation, Albany, N.Y. EPA regulations are administered by the US Environmental Protection Agency, Region II, New York, N.Y.

571-1.06 Bridge Washing Waste. For the purposes of this item, bridge washing waste is defined as paint chips and any organic or inorganic materials dislodged from bridge surfaces by bridge washing operations. The paint chips are known to contain lead, the combined waste stream may therefore be hazardous waste. The Department has presumed that the waste will test as hazardous. Bridge washing waste shall be kept segregated from bridge paint removal waste and shall be placed in containers or roll-offs with additional labeling identifying it as "Bridge Washing Waste".

571-2 MATERIALS. The waste shall be accumulated in clean, dry, weatherproof, watertight containers or roll-offs furnished by the Contractor. The Contractor shall furnish the Engineer with a signed statement from the Disposal Facility that the containers or roll-offs proposed for use by the Contractor are acceptable to the Facility. The dry volume capacity of the container, in cubic yards, shall be clearly marked upon each container, in a location easily readable by the Engineer.

All equipment and containers or roll-offs shall be approved by the Engineer prior to use.

571-3 CONSTRUCTION DETAILS

571-3.01 Containers. All generated waste shall be deposited and sealed, in containers or roll-offs concurrent with generation. No container or roll-off shall be filled to a capacity in excess of that marked on the container or roll-off as the maximum dry volume capacity. No waste shall be left exposed to the elements at the end of the working day.

All containers or roll-offs shall be located in a place secured from traffic and in a manner acceptable to the Engineer.

Each container or roll-off shall be labeled in accordance with US Department of Transportation regulations. Each container or roll-off shall be permanently labeled in the following manner:

HAZARDOUS WASTE. Federal law prohibits improper disposal. If found, contact the nearest police, or public safety authority, or the US Environmental Protection Agency.

Generator's Name: NYSDOT

Manifest Document No. _____

Date: _____

BIN: _____

Note: The date shall be the generation date. It shall be entered by the Engineer using permanent marking material supplied by the Contractor.

571-3.02 Labeling. All labeling, marking (except date mark), and placarding shall be the responsibility of the Contractor and shall be done under the supervision of the Engineer. This work shall be completed to the Engineer's satisfaction prior to the filling or transportation of any particular container or roll-off. All label markings shall be permanent, printed in English, displayed on a background of contrasting color un-obscured by other labels, or attachments. Labeling shall be located away from other markings that could substantially reduce its effectiveness.

571-3.03 Document Preparation. All document preparation and distribution, including the Uniform Hazardous Waste Manifest, shall be the responsibility of the Contractor. The Engineer will sign the Generator's Certification on the Uniform Hazardous Waste Manifest. The LDR (Land Disposal Restricted) certification shall be completed and attached to the manifest, as required by 40 CFR Part 268, "Land Disposal Restrictions."

All waste shall be documented, transported, treated, and disposed as required by the current Federal, State and local laws, rules and codes.

571-3.04 Multiple Collection. It is permissible for the transporting vehicle to pick up paint waste debris, in bulk, from one or more bridge sites for delivery to an authorized treatment, storage and disposal facility (TSDF) if the following conditions are met:

The materials picked up at each site must be essentially identical in physical and chemical characteristics. No materials, other than paint waste debris, may be included if wastes from several individual generating sites are to be combined on the same truck.

All of the component shipments are presumed to be D008 hazardous wastes, and disposed as such.

A manifest is prepared for each generating bridge site. Each manifest must reflect a bulk shipment, and all manifests being carried by the same transporting vehicle must express the quantity in cubic yards. In sum total, the manifests accompanying the shipment must account for the entire volume transported.

All component shipments are intended to be conveyed to the same TSDF, and the TSDF has agreed to accept consolidated bulk loads.

All component shipments must have originated at sites that are under the authority of DOT. No loads may be included that were generated at a site for which another agency is responsible.

Measures must be taken to prevent the blowing or dispersion of the waste during each loading operation and while being transported.

571-3.05 Paint Waste Composition. The Contractor is responsible to ensure that only dry paint removal waste is deposited into the containers or roll-offs.

Provided in the proposal is a note entitled "Typical Paint Removal Waste Composition" which provides typical chemical composition of paint removal waste based on previous chemical testing. The determination has been made that such waste contains less than 2% by weight of organic material. The Contractor is specifically forewarned that disposal facilities perform spot tests and may refuse to accept waste in excess of 2% organic content or that is otherwise different than the Typical Paint Waste Composition. Waste contaminated in this manner will be the Contractor's responsibility. All penalties and costs associated with the refusal of a disposal facility to accept waste not meeting its requirements

will be borne by the Contractor. All testing of the waste necessary to satisfy the requirements of the chosen Disposal Facility or Transporter shall be the responsibility of the Contractor.

571-3.06 Paint Waste Stabilization. For the purposes of this item, treatment of the paint removal and washing waste as required by Federal regulations is presumed to require stabilization of the waste such as mixing it with portland cement and water as necessary at a permitted Hazardous Waste Treatment or Disposal Facility. The stabilized waste shall meet the treatment standards of the Federal regulations prior to disposal in a permitted Hazardous Waste Disposal Facility.

571-3.07 Bridge Washing Waste Composition. The Contractor is responsible for ensuring that only dried bridge washing waste is deposited into the containers or roll-offs. The contractor is warned that the bridge washing waste may contain more than 2% organic content. A typical waste composition profile is not available. All testing of the waste necessary to satisfy the requirements of the Disposal Facility or Transporter shall be the responsibility of the Contractor.

571-4 METHOD OF MEASUREMENT. The work will be measured as the number of dry cubic yards of waste accumulated, packaged, transported, treated, and disposed in accordance with the requirements of this item. The actual quantity within a single container or roll-off will be determined by the Engineer. Once the Engineer determines the quantity within a specific container or roll-off, that container or roll-off shall be properly sealed and not thereafter be tampered with. No additional waste shall be placed in it, nor shall any be removed from it. Under no circumstances will a container or roll-off be measured as containing more than the maximum dry volume capacity marked on it.

571-5 BASIS OF PAYMENT. The unit price bid per cubic yard shall include the cost of all labor, materials, equipment, sampling, testing, and fees necessary to complete the work based on the assumption that treatment by stabilization will satisfy the applicable Federal regulations. Should this prove not to be the case on an industry wide basis, as opposed to an individual Treatment or Disposal Facility, the difference in cost between the cost of treatment by stabilization and the method subsequently found to be necessary shall provide the basis for an order on contract. Only waste for which manifest copies are returned to the Engineer by the Contractor and Disposal Facility will be authorized for payment.

If the Department is fined or penalized as a result of the Contractor's performance or lack thereof on this item, in addition to other remedies the Department may possess, said fine or penalty will be deducted from monies due the Contractor.

The extent of the Contractor's compliance with the provisions under timeliness of disposal will be considered as relevant in any future determination of an award to the Contractor as the lowest responsible bidder for any project under the supervision of the Department.

Payment will be made under:

| Item No. | Item | Pay Unit |
|-----------------|---|-----------------|
| 571.01nnnn | Treatment and Disposal of Paint Removal Waste | Cubic Yard |

NOTE: nnnn represents numbers assigned by the designer and keyed to a particular structure. See elsewhere in these contract documents for a list of structures and the numbers assigned to nnnn.

SECTION 573 - STRUCTURAL STEEL PAINTING: FIELD APPLIED - TOTAL REMOVAL

573-1 DESCRIPTION. This work shall consist of pressure washing, abrasive blast cleaning to remove all paint, rust, rust scale, mill scale, corrosion producing contaminants, and other foreign matter, and painting structural steel surfaces. See Special Note entitled *Structural Painting Details* for the description and requirements for serialized items.

573-2 MATERIALS

573-2.01 Paints. Paints shall meet the requirements of §708-01 *Structural Steel Paints – Class 1*, and shall appear on the Department’s Approved List, ‘Structural Steel Paints – Class 1’. All new paint to be applied to a single structure shall be the same paint system produced by the same manufacturer. The Contractor shall assure this to be the case in the event that multiple paint items are specified on a single structure. This includes both shop and field painted components of the structure.

A. Shelf Life. The shelf life of all components of the coating system shall be a maximum of 12 months from the date of manufacture. The shelf life of factory sealed containers of thinners shall be per manufacturer’s recommendations or 3 years from the date of manufacture, whichever is less, and a maximum of 7 months after the factory seal has been broken. Paint and thinner shall arrive at the work site in new, unopened containers. The label shall include the manufacturer’s name, batch number, color, paint name, and date of manufacture.

B. Paint Storage. Paint in storage shall be protected from damage and maintained in accordance with manufacturer's recommendations. Paint will be considered in storage if it is onsite for more than 8 hours prior to application.

C. Color. Each single coat of paint shall be a different color and provide substantial contrast with the underlying substrate and previous coats. The colors of the primer, stripe coat, and intermediate coat will be the Contractor's option. The color of the finish coat shall be as specified in contract documents.

D. Data Sheets. The Contractor shall supply the Department's representative with the paint manufacturer's material safety data sheets for each paint component to be applied. The material safety data sheets shall be delivered to the Department's representative a minimum of five work days prior to beginning of work. The Department's representative and Contractor shall use the product data sheets posted on the Structural Steel Paints Class 1 Approved List.

573-2.02 Water for Washing. Water for pressure washing shall be potable water. Any detergent or soluble salt remover used must receive approval by the paint manufacturer and the Materials Bureau. Water shall not be recycled.

573-2.03 Abrasive for Blast Cleaning. Abrasive blast media for blast cleaning shall be recyclable, ferrous metallic, abrasive grit. All new metallic abrasive shall be in compliance with the specifications of SSPC-AB 3 Ferrous Metallic Abrasive. All ferrous metallic abrasive used shall be recycled and cleaned in accordance with SSPC-AB 2. The Contractor shall select the size, blend, and hardness of the abrasive to produce an angular anchor profile of a recommended depth as indicated on the manufacturer's data sheets.

All ferrous metallic abrasive arriving on the job site shall be new, and invoices shall be submitted for acceptance. All recycling equipment shall arrive empty and clean.

573-2.04 Paint Inspection Equipment. Prior to the start of work the Contractor shall supply the Engineer with the following specifications and equipment in good working order:

1. One bound copy of the Steel Structures Painting Council surface preparation specification, SSPC SP-1 – *Solvent Cleaning*.
2. One (1) bound copy of the Steel Structures Painting Council surface preparation specification, SSPC-SP 10 – *Near-White Metal Blast Cleaning*.
3. One bound copy of the most current Steel Structures Painting Council Pictorial Standards, SSPC-VIS 1, *Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning*.
4. One bound copy of the Steel Structures Painting Council specification SSPC-PA2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness With Magnetic Gages.
5. One bound copy of Steel Structures Painting Council specification SSPC AB-2 *Specification for Cleanliness of Recycled Ferrous Metallic Abrasives*.
6. One bound copy of Steel Structures Painting Council specification SSPC AB-3 *Specification for Newly Manufactured or Re-Manufactured Steel Abrasive*.
7. One copy of ASTM D4417 Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel.
8. One copy of ASTM D4285 Test Method for Indicating Oil or Water in Compressed Air.
9. One Air Thermometer, pocket type, 10°F to 110°F.
10. One noncontact Infrared Thermometer, 10°F to 110°F.
11. One Contact Thermometer, 10°F to 110°F.

12. One Magnetic Dry-Film Thickness Gage, Type 2 (as defined per SSPC PA-2), with a display capable of measuring 0 to 60 mils in 0.1 mil increments, with calibration shims.
13. Two Wet-Film Thickness Gages, Prong-Type, capable of measuring 1 to 10 mils in 1 mil increments.
14. Psychrometer and US Weather Bureau Psychrometric Tables.
15. Profile micrometer with extra coarse and extra coarse plus replica tape.

All equipment will be returned to the Contractor upon completion of the work.

573-3 CONSTRUCTION DETAILS. The Contractor shall clean and paint all structural steel members, railings, downspouts, and other miscellaneous steel items as indicated in the contract documents.

The Contractor shall provide adequate access, suitable lighting, and time for inspections to be made. Any work done while the Engineer has been restricted from access, shall be recleaned and repainted, at no additional cost to the State to the State.

573-3.01 Quality Control Plan. The Contractor shall provide the Engineer with a copy of the Contractor's Quality Control (QC) procedures and/or Quality Control Plan (QCP). The QCP describes the minimum QC activities that will be performed by Contractor's QC personnel to ensure compliance. The QCP shall minimally include operating procedures and maintenance records for equipment on site, proof of formal QC training for the Contractor's QC personnel on site, and daily reports including the following information:

- Compressed Air Cleanliness
- Dry Film Thickness
- Air Temperature
- Humidity and Dew Point
- Surface Temperature
- Abrasive Cleanliness Checks
- Degree of Cleanliness Achieved
- Surface Profile
- Batch Numbers of Paint Used
- Batch Numbers of Thinner Used
- Mixing According to Specification

The Contractor must provide daily reports to the Engineer at the conclusion of cleaning work and painting work and prior to inspection of such work by the Engineer. Reports at the conclusion of cleaning and painting work shall include all pertinent information listed above that relate to such work and shall be in a format previously agreed to under the QCP.

573-3.02 Surface Preparation. Steel surfaces shall be prepared for painting by a combination of pressure washing, solvent cleaning, and abrasive blast cleaning.

Pressure washing shall be performed first, followed by abrasive blast cleaning to remove all paint, rust, rust scale, and mill scale, as per SSPC SP-10, *Near-White Metal*. If heavy deposits of rust and scale are present, they shall be removed by hand or power tool prior to pressure washing. Deposits of bird droppings taller than 1/2 inch shall be removed prior to pressure washing.

A. Pressure Washing and Solvent Cleaning. All steel surfaces to be painted shall be pressure washed, using an operating pressure range of 1800 to 2000 psi, a minimum flow of 3.5 gal/minute, and a water temperature of 185°F to 200°F. The nozzle shall be held at a distance of 6 to 12 inches from the steel surface. Pressure washing shall only be allowed when ambient air temperatures are

greater than 40°F and rising. In no case will pressure washing be conducted when spent wastewater could freeze on roadway or bridge surfaces or in any other way create a hazardous situation. The washing is intended to remove contaminants from the surface, not to remove tightly adhered paint. Oil and grease shall be removed by solvent cleaning as described in SSPC SP1, *Solvent Cleaning*. The areas shall be pressure washed again following this cleaning.

When the washing is completed, the cleaned surfaces shall be free of dust, dirt, oil, grease, animal waste, salts, and other debris

A containment shall be suspended around and beneath the work area during pressure washing. The containment for pressure washing is intended to capture solid paint chips and other solid debris that may become dislodged from washing operations. Unless otherwise noted, spent wash water will not require collection and will be allowed to fall to the underlying ground or waterway, provided that the other requirements of this specification are met.

Special note, Structural Painting Details, will provide scheduling requirements for washing a structure over a body of water. Spent wash water over a public water supply or the New York City watershed shall be collected and diverted to the adjoining land mass.

If steel surfaces become contaminated or 7 calendar days elapse between washing and abrasive blasting cleaning, they shall be rewashed at no additional cost to the State.

The surface shall be allowed to dry before subsequent abrasive blast cleaning begins.

B. Abrasive Blast Cleaning.

1. Atmospheric Conditions. Blast cleaning operations shall not be conducted under the following conditions:

- a. The relative humidity exceeds 85%.
- b. When the substrate is damp or covered by frost.
- c. The surface temperature is less than 5°F above the dew point.

2. Steel Cleanliness and Profile. All structural steel surfaces shall be blast cleaned to SSPC SP-10, *Near-White Metal*.

The anchor profile shall be measured in accordance with ASTM D4417, Method C. The Contractor shall ensure that the anchor profile is within the range indicated on the paint manufacturer's data sheets. The profile, at a minimum, shall be measured five times in various locations every 2000 square feet prepared and once per work shift, unless otherwise ordered by the Engineer. The anchor profile shall not exceed 4 mils unless approved by the Engineer. The Engineer may approve a profile greater than 4 mils if an area is severely corroded or pitted. If the Contractor exceeds the 4 mils profile, the Contractor will be required to measure the profile using extra-coarse-plus replica tape and apply an additional mist coat of primer in accordance with manufacturer's recommendations to obtain a minimum 2 mils film build over the profile peaks, at no additional cost to the State.

All fins, tears, slivers, flame-cut edges, burred and sharp edges that are present or occur during the blasting operation shall be removed by grinding, and then the area shall be reblasted to provide the required profile.

Special attention shall be given to the edges of beam flanges, angles and plates, bearings, rivets, the heads of nuts and bolts, structural steel surrounding bridge joints, and similar surfaces that are marginally accessible and difficult to clean.

Upon completion of blast cleaning and prior to inspection, the containment shall be vacuumed and the cleaned surfaces shall be free of all blasting products and paint debris. Surfaces shall be free of all abrasive prior to inspection. Surfaces shall be cleared of all foreign matter by means of oil-free, moisture-free, compressed air or vacuum systems

All cleaned surfaces will be inspected by the Engineer prior to painting. Any areas that are painted before being inspected shall be cleaned and restored to the SP-10 standard and repainted at no additional cost to the State. If the cleaned surface begins to rust or becomes contaminated in any matter prior to applying primer, the surface shall be restored to SP-10 standard.

3. Steel Grit. The recyclable abrasive shall be cleaned of all paint, chips, rust, mill scale, and other foreign material after each use, prior to reuse. The cleanliness of the recycled abrasive during use shall be confirmed in accordance with SSPC-AB2. The Contractor shall execute, record, and provide the Engineer results of the nonabrasive residue test, water soluble test, and oil content test daily. The Engineer may be present during this testing. The Contractor shall also execute and provide lead content test results weekly. All equipment used for cleaning abrasive shall be specifically designed for this purpose and accepted by the Engineer.

The Contractor shall maintain a balance in the size distribution of the abrasive work mix for the duration of the abrasive blasting operations to maintain a uniform profile across the surfaces to be blasted. The work mix shall not be predominantly coarse or fine, and shall be maintained through proper removal of expended abrasive and its timely replenishment.

4. Protection of Newly Painted Surfaces. Throughout abrasive blast cleaning work, care shall be taken to protect newly painted surfaces from the cleaning operations. Tarps, covers, or other devices shall be used to protect new paint from contamination or damage. Contaminated areas of new paint shall be cleaned as necessary prior to the next coat of paint. Damaged paint shall be blast cleaned to the required condition, and then repainted at no additional cost to the State.

5. Vacuuming. After cleaning operations are completed, all debris generated by the cleaning work shall be removed by vacuuming using HEPA-filtered vacuums. A HEPA filter shall be defined as a filter that is at least 99.97% efficient for particles that are 0.3µm in diameter, or larger.

6. Equipment. All equipment and compressors used in the cleaning operation shall be equipped with filters and traps to prevent moisture, oil, and other contaminants from being deposited on clean surfaces. The air cleanliness shall be verified by the Contractor with the white blotter test in accordance with ASTM D4285 at least once per shift for each compressed air system.

7. Cleaning Area. The area cleaned shall be limited to that which can be cleaned, inspected and prime coated within a 10-hour period. Cleaned areas shall be inspected by the Engineer prior to priming. Areas that exhibit flash rusting or fail to meet the local standard prior to painting shall be re-cleaned to the approved standard at no additional cost to the State.

C. Visual and Project Standards. The Contractor shall prepare at least one project cleaning standard for each representative area on the structure that is being prepared for painting. Multiple standards may be required if the cleaned steel differs significantly from the photographic standards due to surface conditions, or other factors such as distance of the standard from the work area.

The prepared cleaning standard shall conform to SSPC VIS 1, *"Guide and Reference Photographs for Steel Surfaces Prepared By Dry Abrasive Blast Cleaning"* Pictorial Standard as applicable, and shall be approved by the Engineer before the start of general cleaning work. Each cleaning standard shall be at least 12 x 12 inches in size, and shall be located in an area of the structure that is easily accessible, and approved by the Engineer. The Contractor shall protect the work standard from corrosion and contamination throughout the duration of work by applying a clear coat of polyurethane. At the completion of cleaning work, the cleaning standard shall be cleaned and

painted. If the project standard becomes deteriorated, or otherwise ineffective, it shall be reestablished at no additional cost to the State. In case of a dispute over the visual standard, the written standard shall take precedence.

573-3.03 PAINTING. The Contractor shall apply three full coats of new paint and one stripe coat to all surfaces cleaned to SP-10. The paint shall be applied in the following order: primer, intermediate coat, stripe coat, and the finish coat. All steel surfaces within 6 feet of a bridge joint shall receive an additional full coat of intermediate paint.

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 40°F and rising. Paint shall not be applied when surface or ambient temperatures are greater than 100°F. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is absolutely dry.

Paint shall not be applied when the relative humidity is more than 85% or the surface temperature is less than 5°F above the dew point. If manufacturer's requirements are more restrictive then they shall be followed. No paint shall be applied during rain or when rain is forecast to occur by the National Weather Service for the project location during painting operations. All painted surfaces shall be protected from direct exposure to rain for the time interval recommended by the paint manufacturer for proper cure. The Contractor shall observe the dew point and humidity restrictions listed on the manufacturer's data sheets.

If an epoxy coating is exposed to temperatures or humidity conditions outside of the manufacturer's recommended values prior to cure, all affected surfaces shall be visually examined for greased or oily surfaces which may have formed. The Engineer may require the Contractor to use a commercially available amine blush test kit at locations chosen by the Engineer. If testing indicates the presence of an amine blush or if there is any oily film on the surface, the surfaces shall be cleaned and prepared for topcoating in accordance with paint manufacturer's recommendations at no additional cost to the State.

B. Paint Mixing. All paint shall be thoroughly mixed with mechanical mixers in accordance with the manufacturer's recommendations. After mixing, the bottom of the container shall be free of any unmixed pigment prior to use.

C. Solvents and Thinners. Paint may be thinned if recommended by the manufacturer and approved by the Engineer. The primer shall not be thinned such that the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for metallic pigmented coatings. Intermediate and finish paints shall not be thinned such that the resulting VOC level exceeds the maximum allowable §205.3 limit for industrial maintenance coatings. The manufacturer's data sheets shall advise the Contractor and Engineer of the maximum amount of thinner allowed.

Use of unauthorized thinners, or using excess amounts of thinners is prohibited. Any area where unauthorized or improper amounts of solvents or thinners are used shall be recleaned and repainted at no additional cost to the State. All thinning shall be performed in the presence of the Engineer.

D. Paint Application. Painting shall not begin until cleaned surfaces have been inspected and approved by the Engineer. Paint may be applied using spray or brush and roller, unless otherwise indicated by the contract documents. All paint shall be applied so as to produce a uniform, even coating free of runs, sags, drips, ridges, or other defects. Roller nap shall be limited in accordance with the paint manufacturer's recommendation. Brushes and rollers used to apply the paint must be of a quality to produce a smooth uniform coating without leaving fibers in the coating.

Protection against paint spatter, spillage, wind blown paint, or similar releases of paint shall be provided. Covers, tarps, mesh, and similar materials shall be placed around the work area to protect

public and private property, pedestrian, vehicular or marine traffic, all portions of the bridge, highway appurtenances, waterways, and similar surrounding areas and property, upon, beneath, or adjacent to the structure. The use of spray equipment for paint application shall be allowed within containments provided that the aforementioned protection against paint release is provided, all equipment used (including tarps, mesh and similar materials) meets all safety requirements for such enclosed use with paint spraying, and all OSHA requirements for safety and ventilation are met.

E. Stripe Coat. A stripe coat shall extend a minimum of 1 inch away from the following surfaces: all welds, rivets, bolts, nuts, edges of plates and structural members, angles, bearings, lattice pieces or other shapes, corners, and crevices. Areas near bridge joints that are to receive an additional coat of intermediate paint shall also receive a stripe coat where necessary as described above. To provide contrast, paint for stripe coating shall be a different color than the receiving surface. The stripe coat shall use the intermediate paint and be applied after the intermediate coat. The stripe coat shall be brush applied without being thinned. The stripe coat will be applied in accordance with the manufacturer's recommendations, with particular attention to the film thickness, recoat window and cure schedule.

F. Paint Film Thickness. Paint shall be applied to produce the specified dry-film thickness as directed by the range listed on the paint manufacturer's data sheets. The dry-film thickness shall be determined in accordance with SSPC-PA 2, Paint Application Specification No. 2 - *Measurement of Dry Film Thickness with Magnetic Gages*, using a Type 2 fixed probe magnetic gages. Dry film thickness gauges shall be calibrated over a blasted, approved surface on the structure using two NIST traceable shims as described in the "two point calibration adjustment" section of Appendix 2 of SSPC-PA 2. The two shims must be just below and above the recommended thickness range of the prime coat, or the combined thickness of successive coats, as applicable. DFTs of the intermediate and finish coats shall be determined by subtracting the average DFT readings of the previous coat(s) from the actual DFT reading. An average DFT value shall be recorded and calculated for every 1000 square feet prepared. The average shall be calculated using a minimum of 5 spot measurements as defined by SSPC-PA2. At least one of the spot measurements shall be performed on the bottom face of the bottom flange of stringers, girders or floor beams if these elements are in the work area.

Areas failing to meet the specified minimum dry-film thickness shall be top coated with the same paint to produce the total dry film thickness required. The top coating must be performed within the paint manufacturer's specified recoat window.

The Engineer may require any area exceeding the manufacturers recommended dry-film thickness to be blast cleaned to the SP-10 condition.

G. Painting Schedule. Primer shall be applied to approved, abrasive-blasted surfaces according to section §573-3.02, B. 7 of this specification.

Each area as defined by §573-3.02, B. 7 shall receive an intermediate coat of paint within 72 hours after priming. To prevent intercoat adhesion failure, the topcoat shall be applied within the manufacturer's recommended recoat window, or 14 days, whichever is shorter. If the contractor fails to topcoat within the specified time period, the surface to be painted shall be cleaned and abraded, in accordance with manufacturer's recommendations, to ensure adhesion of the following coat at no additional cost.

If the steel has become dirty between coats, the Contractor shall wash the bridge again at no additional cost to the State.

Manufacturer's recommendations shall be observed for cure to handle, and cure to top coat schedules.

H. Stenciling. After the finish coat of paint has cured, the Contractor shall stencil the following information on the inside web of the fascia member, near the BIN plate, unless otherwise directed by the Engineer:

1. Month and year of completion
2. Contract number
3. SP10
4. Name of Paint Manufacturer
5. Name of Contractor
6. Primer, Intermediate, and Finish coat names

The stenciled lettering should be approximately 6 inches in height and be a contrasting paint color to the top coat.

573-4 METHOD OF MEASUREMENT

The work under this item will be measured on a lump sum basis per structure.

573-5 BASIS OF PAYMENT

The lump sum price bid shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work, including the cost of providing protection against damage to public and private property during surface preparation and paint application. Payment for the containment, collection and disposal of dust and paint waste generated by surface preparation work shall be paid for separately.

Progress payments will be based on the percentage of steel cleaned and painted. No more than 60% of the quantity will be paid for surface preparation and priming. The remaining amount will be paid following the satisfactory completion of work.

Payment will be made under:

| Item No. | Item | Pay Unit |
|-----------------|---|-----------------|
| 573.01nnnn | Structural Steel Painting Field Applied - Total Removal | Lump Sum |

NOTE: nnnn denotes a serialized pay item.

SECTION 574 - STRUCTURAL STEEL PAINTING: OVERCOATING AND LOCALIZED

574-1 DESCRIPTION. This work shall consist of pressure washing and power-tool or vacuum-blast cleaning of damaged paint areas and corroded structural steel surfaces, and painting surfaces described in contract documents. See Special Note entitled *Structural Painting Details* for the description and requirements of serialized items.

574-2 MATERIALS

574-2.01 Paints. Paints shall meet the requirements of §708-02 *Structural Steel Paints Class 2* and shall appear on the Department's Approved List, "Structural Steel Paints – Class 2". Paints shall be approved for either localized application, overcoating application, or both.

All new paint to be applied shall be produced by the same manufacturer. Any exception must have prior approval of the director of the Materials Bureau and the Engineer.

A. Shelf Life. The shelf life of all paint shall be a maximum of 12 months from the date of manufacture. Paint and thinner shall arrive at the work site in new, unopened containers. The label shall include the manufacturer's name, batch number, color, paint name, and date of manufacture.

B. Paint Storage. Paint in storage shall be protected from damage and maintained in accordance with manufacturer's recommendations. Paint will be considered in storage if it is onsite for more than 8 hours prior to application.

C. Color. Each single coat of paint shall be a different color and provide substantial contrast with the underlying substrate and previous coats. The color of the finish coat shall be as specified in contract documents. The color of the other coats will at the Contractor's option.

D. Technical Data. The Contractor shall supply the Engineer with the paint manufacturer's technical data and materials safety data sheets for each paint to be applied. The data sheets shall be delivered to the Engineer a minimum of five work days prior to beginning of work. Data sheets shall include all information required by §708-02 *Structural Steel Paints Class 2*.

574-2.02 Water for Washing. Water for pressure washing shall be potable water. Any detergent or soluble salt remover used must receive approval by the paint manufacturer and the Materials Bureau. Water shall not be recycled.

574-2.03 Abrasive for Blast Cleaning. Abrasive material for blast cleaning shall be selected by the Contractor. Silica sand and other types of nonmetallic abrasive containing more than one percent free silica, by weight, will not be allowed. The abrasive blasting shall produce an angular anchor profile suitable for the paint system to be applied.

574-2.04 Paint Inspection Equipment. Prior to the start of work the Contractor shall supply the Engineer with the following specifications and equipment in good working order:

1. One bound copy of the Steel Structures Painting Council surface preparation specification, SSPC SP-1 – *Solvent Cleaning*.
2. One (1) bound copy of the Steel Structures Painting Council surface preparation specification, SSPC-SP 11 – *Power Tool Cleaning to Bare Metal*.
3. One (1) bound copy of the Steel Structures Painting Council surface preparation specification, SSPC-SP 10 – *Near-White Metal Blast Cleaning*.
4. One bound copy of the Steel Structures Painting Council pictorial standards, SSPC-VIS 3, *Guide and Reference Photographs for Steel Surfaces Prepared by Power and Hand Tool Cleaned Steel*.
5. One bound copy of the most current Steel Structures Painting Council pictorial standards, SSPC-VIS 1, *Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning*.

6. One bound copy of the Steel Structures Painting Council method SSPC-PA2, *Paint Application Specification No. 2 - Measurement of Dry Film Thickness With Magnetic Gages*.
7. One copy of ASTM D4417 Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel.
8. One copy of ASTM D4285-83 (1999) Test Method for Indicating Oil or Water in Compressed Air.
9. One Air Thermometer, pocket type, 10°F to 110°F.
10. One noncontact Infrared Thermometer, 10°F to 110°F.
11. One Contact Thermometer, 10°F to 110°F.
12. One Paint Thermometer, 10°F to 110°F.
13. One Magnetic Dry-Film Thickness Gage, Type 2 (as defined per SSPC PA-2), with a display capable of measuring 0 to 60 mils in 0.1 mil increments, with calibration shims.
14. Two Wet-Film Thickness Gages, Prong Type, capable of measuring 1 to 10 mils in 1 mil increments.
15. Psychrometer and US Weather Bureau Psychrometric Tables.
16. Profile micrometer with extra coarse replica tape.

All equipment will be returned to the Contractor upon completion of the work.

574-3 CONSTRUCTION DETAILS. Overcoating is defined as spot cleaning and priming corroded areas followed by applying two coats of paint to all existing painted steel surfaces. Localized cleaning and painting is defined by spot cleaning and applying three coats of paint to spot-cleaned steel only.

The Contractor shall provide adequate access, suitable lighting, and time for inspections to be made. Any work done while the Engineer has been denied, or restricted from access, shall be recleaned and repainted at no additional cost to the State.

574-3.01 Quality Control Plan. The Contractor shall provide the Engineer a copy of the Contractor's Quality Control (QC) procedures and/or Quality Control Plan (QCP). The QCP describes the minimum QC activities that will be performed by Contractor's QC personnel to ensure compliance. The QCP shall minimally include operating procedures and maintenance records for equipment on site, proof of formal QC training for the Contractor's QC personnel on site, and daily reports including the following information:

- Compressed Air Cleanliness
- Dry-Film Thickness
- Air Temperature
- Humidity and Dew Point
- Surface Temperature
- Abrasive Cleanliness Checks
- Degree of Cleanliness Achieved
- Surface Profile
- Batch Numbers of Paint Used
- Batch Numbers of Thinner Used
- Mixing According to Specification

The Contractor must provide daily reports to the Engineer upon request. The reports shall be submitted no later than 24 hours following the completion of the days work.

574-3.02 Surface Preparation for Overcoating. Steel surfaces shall be prepared for painting by a combination of pressure washing and power-tool or vacuum-shrouded blast cleaning. Pressure washing of all areas to be painted shall be performed first, followed by power-tool cleaning of areas demonstrating corrosion of the steel substrate to remove all paint, rust, rust scale, and mill scale, as per SSPC SP-11, *Power Tool Cleaning to Bare Metal* or *SSPC SP-10, Near-White Metal Blast Cleaning* as applicable. If heavy deposits of rust and scale are present, they shall be removed by hand or power tool prior to pressure washing. Areas of tightly adhered coating to remain shall be abraded to provide an anchor profile for overcoat paint. Large deposits of bird droppings shall be removed prior to pressure washing.

A. Pressure Washing and Solvent Cleaning. All steel surfaces to be painted shall be pressure washed, using an operating pressure range of 1800 to 2000 psi, a minimum flow of 3.5 gal/minute,

and a water temperature of 185°F to 200°F. The nozzle shall be held at a distance of 6 to 12 inches from the steel surface. Pressure washing shall only be allowed when ambient air temperatures are greater than 40°F and rising. In no case will pressure washing be conducted when spent wastewater could freeze on roadway or bridge surfaces or in any other way create a hazardous situation. The washing is intended to remove contaminants from the surface, not to remove tightly adhered paint. Oil and grease shall be removed by solvent cleaning as described in SSPC SP1, *Solvent Cleaning*. The areas shall be pressure washed again following this cleaning.

When the washing is completed, the cleaned surfaces shall be free of dust, dirt, oil, grease, animal waste, salts, and other debris

A containment shall be suspended around and beneath the work area during pressure washing. The containment for pressure washing is intended to capture solid paint chips and other solid debris that may become dislodged from washing operations. Unless otherwise noted, spent wash water will not require collection and will be allowed to fall to the underlying ground or waterway, provided that the other requirements of this specification are met.

Special note, Structural Painting Details, will provide scheduling requirements for washing a structure over a body of water. Spent wash water over a public water supply or the New York City watershed shall be collected and diverted to the adjoining land mass.

If steel surfaces become contaminated or 7 calendar days elapse between washing and abrasive blasting cleaning, they shall be rewashed at no additional cost to the State.

B. Power Tool Cleaning. Power tools as described in SSPC-SP 11 shall be used to clean corroded steel. Vacuum-shrouded abrasive blasting may be allowed. Steel cleaned using vacuum-shrouded blasters shall be cleaned to SSPC-SP 10.

1. Atmospheric Conditions. No cleaning operations will be conducted under the following conditions:

The relative humidity exceeds 85%.

When the substrate is damp or covered by frost.

The surface temperature is less than 5°F above the dew point.

2. Steel Cleanliness and Profile. Surfaces which have become visibly corroded shall be cleaned in accordance with SSPC-SP 11 or SSPC-SP 10, as applicable. Areas where the existing paint has peeled, flaked, blistered, or otherwise become deteriorated shall be cleaned until only sound paint, tightly adherent paint remains. These areas need not be cleaned to SP-11 or SP-10 if the damage does not extend to the steel surface and corrosion of the steel substrate or the mill scale is not evident.

Equipment used shall produce an anchor profile meeting the manufacturer's requirements as reported on the manufacturer's data sheets.

Special attention shall be given to the edges of beam flanges, angles and plates, bearings, rivets, the heads of nuts and bolts, structural steel surrounding bridge joints, and similar surfaces that are marginally accessible and difficult to clean.

The edges of intact paint shall be feathered back and the adjoining paint must be tightly adhered. Ragged or lifting edges on adjoining paint will not be allowed. Adherence will only be considered satisfactory if the adjoining paint is smoothly feathered back, and cannot be removed by lifting with a dull putty knife.

3. Vacuuming. The vacuum assembly on all tools shall be capable of containing all visible dust and debris produced by the operation of the cleaning equipment. Air passing through the vacuum assembly shall be exhausted through a HEPA filter. A HEPA filter shall be defined as a filter that is at least 99.97% efficient for particles that are 0.3 µm in diameter, or larger.

4. Preparation of Remaining Coating. Areas exhibiting damaged or deteriorated paint not extending to the steel shall be power-tool cleaned to remove all damaged or loosely adhered paint and provide a suitable surface for top coating. Loosely adhered paint will lift when scraped with a dull putty knife.

After cleaning and feathering edges, all remaining tightly adhered coating shall be abraded. The abrading operation shall not fracture or remove a significant amount of existing coating, only

provide surface profile suitable to receive additional coats of paint. The degree of abrasion shall be in accordance with the manufacturer's recommendations.

The Contractor shall choose the method of abrasion. No additional payment will be made for the appropriate containment and waste collection required to abrade the surface. Open abrasive blasting to abrade the surface shall require a Class A containment, in accordance with Section 570 *Paint Removal Operations*. All other methods of abrasion shall minimally require the same level of containment as specified in contract documents for a particular structure.

If the Contractor chooses a wet-abrasive method for abrasion, the containment must meet the requirements of SSPC – Guide 6, Class 2W. All water and abrasive must be collected and disposed of as hazardous waste.

All dust, powder, or residual abrasive remaining on the surface after the abrading operation shall be thoroughly removed and the remaining surface clean prior to painting.

5. Cleaning Area. The area cleaned shall be limited to that which can be cleaned, inspected and prime coated within a 10 hour period. Cleaned areas shall be inspected by the Engineer prior to priming. Areas that exhibit flash rusting within the 10-hour period or fail to meet the project cleaning standard prior to painting shall be recleaned.

C. Visual and Project Standards. The Contractor shall prepare at least one project cleaning standard for each representative area on the structure that is being prepared for painting. Multiple standards may be required if the cleaned steel differs significantly from the photographic standards due to surface conditions, location from work area, or other factors such as distance of the standard from the work area.

The prepared standard shall generally conform to SSPC VIS 3, *Visual Standard for Power- and Hand-Tool Cleaned Steel*, and shall be approved by the Engineer before the start of general cleaning work. Each cleaning standard shall be at least 12 x 12 inches in size, and shall be located in an area of the structure that is accessible to, and approved by the Engineer. The Contractor shall protect the cleaning standard from corrosion and contamination throughout the duration of work by applying a clear coat of polyurethane. At the completion of cleaning work, the project standard shall be recleaned and painted. If the project cleaning standard becomes deteriorated, or otherwise ineffective, it shall be reestablished at no additional cost to the State. Corroded and deteriorated surfaces that have been cleaned using power tools shall be accepted by visual comparison to the project prepared standard(s) for each structure. In case of a dispute over the visual standard, the written standard shall take precedence.

574-3.03 Surface Preparation for Localized Cleaning and Painting. All of the requirements of §574-3.02 shall apply with the exception of abrading the remaining coating. Only tightly adherent existing coating within 6 inches of a power tool cleaned surface shall be abraded.

574-3.04 Overcoat Painting. The paint shall appear on the Department's Approved List, 'Structural Steel Paints - Class 2' and be approved for overcoating application.

The Contractor shall apply each coat of paint in the order listed on the Department's Approved List 'Structural Steel Paints - Class 2.'

A. Atmospheric Conditions. Paint shall not be applied when the receiving surface and ambient temperatures are less than 40°F or greater than 100°F, unless the manufacturer's recommendations for temperature are more restrictive. No paint shall be applied unless the receiving surface is absolutely dry.

Paint shall not be applied when the relative humidity is more than 95% unless the paint manufacturer's requirements are more restrictive. No paint shall be applied during rain.

The Contractor shall observe the dew point restrictions listed on the manufacturer's data sheets.

If an epoxy coating is exposed to cold temperatures or humid conditions outside of the manufacturer's recommended values prior to cure, the surface shall be visually examined for greased or oily surfaces which may have formed. The Engineer may also require the Contractor to use a commercially available amine blush test kit in various locations. If testing indicates the presence of

an amine blush or if there is any oily film on the surface, the surfaces shall be cleaned in accordance with paint manufacturer's recommendations at no additional cost to the State.

B. Paint Mixing. All paint shall be thoroughly mixed with mechanical mixers in accordance with the manufacturer's recommendations. After mixing the bottom of the container shall have no unmixed pigment.

C. Solvents and Thinners. Paint may be thinned if recommended by the manufacturer and approved by the Engineer. The primer, if classified as metallic pigmented, shall not be thinned such that the resulting VOC exceeds 500 g/L. The subsequent coats of paints shall not be thinned such that the resulting VOC level exceeds 340 g/L.

Use of unauthorized thinners, or using excess amounts of thinners is prohibited. Any area where unauthorized solvents or thinners are used shall be recleaned and repainted at no additional cost to the State. All thinning shall be performed in the presence of the Engineer.

D. Paint Application. Painting shall not begin until cleaned surfaces have been inspected and approved by the Engineer. Paint may be applied using spray, brush, or roller, unless otherwise indicated by the contract documents or prohibited by the paint manufacturer. All paint shall be applied so as to produce a uniform, even coating, free of runs, sags, drips, ridges or other defects. Roller nap shall be limited in accordance with the paint manufacturer's recommendation. Areas exhibiting trapped fiber or bristles shall be rejected. Prepared areas that exhibited damaged paint not extending to the steel substrate shall receive two coats of paint : intermediate and finish coat.

Complete protection against paint spatter, spillage, wind-blown paint, or similar releases of paint shall be provided. Covers, tarps, mesh, and similar materials shall be placed around the work area to protect public and private property, pedestrian, vehicular, marine, or other traffic, all portions of the bridge, highway appurtenances, waterways, and similar surrounding areas and property, upon, beneath, or adjacent to the structure. The use of spray equipment for paint application shall be allowed within containments provided that the aforementioned protection against paint release is provided, all equipment used (including tarps, mesh and similar materials) meets all safety requirements for such enclosed use with paint spraying, and all OSHA requirements for safety and ventilation are met.

E. Paint Film Thickness. Paint shall be applied to produce the specified dry-film thickness (DFT) as directed by the range listed on the paint manufacturer's data sheets. The dry-film thickness shall be determined in accordance with SSPC-PA 2, Paint Application Specification No. 2 - *Measurement of Dry Film Thickness with Magnetic Gages*, using a Type 2, fixed-probe magnetic gages. Dry-film thickness gauges shall be calibrated over a cleaned, approved surface.

DFTs of the all coats applied subsequent to the primer shall be determined by subtracting the average DFT readings of the previous coat(s) from the actual DFT readings. An average DFT value shall minimally be recorded and calculated for every 1000 square feet prepared. The average shall be calculated using a minimum of 5 spot measurements as defined by SSPC-PA2.

Areas failing to meet the specified minimum dry-film thickness shall be top coated with the same paint to produce the total dry film thickness required. The top coating must be performed within the paint manufacturer's specified recoat window.

The Engineer may require any area exceeding the manufacturers recommended dry film thickness to be cleaned to the SSPC-SP 11 or SSPC-SP 10 condition.

F. Painting Schedule. Primer shall be applied as per §574-3.02, B.5 of this specification.

The second coat shall be applied within 72 hours of the final cleaning operation.

To prevent intercoat adhesion failure, recoating must be performed within the manufacturer's recommended recoat window, or 14 days, whichever is shorter. If the contractor fails to recoat within the specified time period, the surface to be painted shall be cleaned and abraded in accordance with manufacturer's recommendations. This work shall be done at no additional cost to the State.

If the steel has become dirty between coats, the Contractor shall wash the bridge again at no additional cost to the State.

574-3.05 Painting for Localized Cleaning and Painting. The paint shall appear on the Department's Approved List, 'Structural Steel Paints - Class 2' and be approved for localized application.

The Contractor shall apply each coat of paint in the order listed on the Department's Approved List "Structural Steel Paints - Class 2".

All of the requirements of §574-3.04 shall apply with the exception of area painted. Only areas that have been cleaned shall be painted. Paint shall not extend more than 6 inches beyond all power-cleaned areas.

574-4 METHOD OF MEASUREMENT

574-4.01 Overcoating - Lump Sum. The work under this item will be measured on a lump sum basis, per structure.

574-4.02 Overcoating - Square Feet. The measurement of this item will include the area requiring overcoating, measured to the nearest whole square feet.

574-4.03 Localized - Square Feet. The quantity to be measured will be in square feet of area of steel cleaned and painted, measured the nearest whole square feet.

574-5 BASIS OF PAYMENT

The lump sum price bid shall include the cost of all labor, materials, and equipment necessary to complete the work, including the cost of providing protection against damage to public and private property during pressure washing and paint application. Payment for the containment, collection and disposal of dust and paint waste generated by surface preparation work shall be paid for separately.

Progress payments will be based on the percentage of steel cleaned and painted. 60% of the quantity will be paid for surface preparation and priming. The remaining amount will be paid following the satisfactory completion of work.

Payment will be made under:

| Item No. | Item | Pay Unit |
|-----------------|--|-----------------|
| 574.01nnnn | Structural Steel Painting: Overcoating | Lump Sum |
| 574.02nnnn | Structural Steel Painting: Overcoating | Square Foot |
| 574.03nnnn | Structural Steel Painting: Localized | Square Foot |

NOTE: nnnn denotes a serialized pay item.

SECTION 708 - PAINTS

708-01 STRUCTURAL STEEL PAINTS CLASS 1

SCOPE: This specification defines the requirements for materials appearing on the Department's Approved List, "Structural Steel Paints, Class 1."

MATERIAL REQUIREMENTS: The system shall be able to be applied as a shop or a field-applied coating over an SSPC SP-10 cleaned surface.

The paint shall be a 3-coat system whose primer is an organic zinc-rich epoxy with pigment primarily consisting of zinc dust.

The paint shall have undergone National Transportation Product Evaluation Program (NTPEP) testing and meet NEPCOAT Qualified Products List B approval criterion and the requirements of Materials Method NY 6. The coating manufacturer shall submit NTPEP results, field histories of the coating, Material Safety Data Sheets, and Technical Data Sheets to the Materials Bureau. Any formulation or technical data sheet change may affect approval status, and shall be reported to the Materials Bureau. Failure to notify the Materials Bureau shall result in the removal of the system from the Approved list.

The system's Technical Data Sheets shall contain the following information;

- Temperature Range for Storage
- Profile Range
- Temperature for Application
- Cure to Handle/Overcoat Schedule
- Humidity and Dew Point Restrictions
- Mixing Recommendations
- Thinners allowed and resulting VOC levels
- Recoat Window
- Paint Film Thickness Range, Wet and Dry-Film Values
- Surface preparation requirements
- Application Requirements

If the data sheet does not have all of the above information, the manufacturer will be required to submit a letter to the Engineer with the above information. The letter will be considered an addendum to the technical data sheet. The manufacturer's data sheet, and addendum if applicable, will be posted on the Department's Approved List, Structural Steel Paints, Class 1, as the official reference for New York State.

BASIS OF ACCEPTANCE: Contract acceptance will be based on the appearance of the product on the Approved List.

708-02 STRUCTURAL STEEL PAINTS CLASS 2

SCOPE: This specification defines the requirements for materials appearing on the Department's Approved List, "Structural Steel Paints, Class 2."

MATERIAL REQUIREMENTS: The system shall be able to be applied in the field over an SSPC SP-10 blasted or an SSPC SP-11 power tool cleaned surface, or a properly prepared, previously painted surface.

The paint shall have undergone National Transportation Product Evaluation Program (NTPEP) testing, and meet NEPCOAT Qualified Products List B approval criterion and the requirements of Materials Method NY 6. The coating manufacturers shall submit NTPEP results, field histories of the coating, Material Safety Data Sheets, and Technical Data Sheets to the Materials Bureau.

Any formulation or technical data sheet change may affect approval status and shall be reported to the Materials Bureau. Failure to notify the Materials Bureau shall result in the removal of the system from the Approved list.

The system's Technical Data Sheets shall contain the following information:

- Temperature Range for Storage
- Profile Range
- Temperature for Application
- Cure to Handle/Overcoat Schedule
- Humidity and Dew Point Restrictions
- Mixing Recommendations
- Thinners Allowed and Resulting VOC Levels
- Recoat Window
- Paint Film Thickness Range
- Surface Preparation Requirements
- Application Requirements

If the data sheet does not have all of the above information, the manufacturer will be required to submit a letter to the Engineer with the above information. The letter will be considered an addendum to the technical data sheet. The manufacturer's data sheet, and addendum if applicable, will be posted on the Department's Approved List, Structural Steel Paints, Class 2, as the official reference for New York State.

BASIS OF ACCEPTANCE: Contract acceptance will be based on the appearance of the product on the Approved List.

708-03 (VACANT)

708-04 ZINC CHROMATE PRIMER

SCOPE. This paint is used as a prime coat on aluminum in contact with fresh concrete to reduce the effect of alkali attack.

MATERIAL REQUIREMENTS. The composition of this paint shall be as shown in the following table using ingredients conforming to the requirements of the applicable specifications indicated.

| Component | Specification | Lbs. Per 100 Gal. |
|------------------------------------|-----------------------------|-------------------|
| Zinc Yellow | (TT-P-465) | 270 |
| Titanium Dioxide, Rutile, | Chalk Resistant | 75 |
| Zinc Oxide (American Process Type) | (ASTM D79) | 95 |
| Sienna, Raw | (ASTM D765) | 25 |
| Magnesium Silicate | (ASTM D605) | 75 |
| Aluminum Stearate | (MIL-A-15206A) | 6.0 |
| Resin, alkyd Solution | (TT-R-266C, Type I) | 345 |
| Dipentene | (TT-D-376) | 22.0 |
| Petroleum Spirits | (TT-T-291, Type I, Grade A) | 235 |
| Lead Napthenate | (ASTM D600, Class B) | 12.0 |
| Cobalt Napthenate | (ASTM D600, Class B) | 1.2 |
| Magnesium Napthenate | (ASTM D600, Class B) | 1.2 |

The quantitative requirements of zinc chromate primer shall be as follows:

| | Min. | Max. |
|---|-------|-------|
| Pigment | 45.0% | 49.0% |
| Vehicle | 51.0% | 55.0% |
| Volatile by weight of paint | 29.5% | 33.5% |
| Weight (lb/gal) | 11.0 | 11.6 |
| Water | - | 0.5% |
| Coarse particles & skins (total residue retained on 45 um sieve based on paint) | - | 0.5% |
| Fineness of Grind (North Standard) | 4 | - |
| Viscosity at 25°C (Stormer-Krebs Units) | 62 | 82 |
| Zinc oxide (ZnO), by weight of pigment | 34.0% | 39.0% |
| Titanium Dioxide (TiO ₂), by weight of pigment | 12.0% | 14.5% |
| Chromium Trioxide (CrO ₃), by weight of pigment | 20.0% | - |
| Phthalic Anhydride, by weight of non-volatile vehicle | 23.0% | - |
| Flash Point | 86°F | - |

The percentages noted relate to mixture by weight. The paint shall dry set to touch within two hours and dry hard within 6 hours. No resin and resin derivatives shall be present in the paint. The paint shall show no evidence of cracking when subjected to a 1/8 inch "mandrel flexibility test."

708-05 STANDARD PAINT COLORS

SCOPE: This specification defines commonly used colors.

DEFINITIONS:

Color Reference Standard
Sage Green Paint

Munsell 7.5 GY 5/4

| | |
|----------------------------------|-------------------------------------|
| Light Gray Paint | Munsell 10B 6/1 |
| Blue Paint | Federal Color Standard 595, # 35177 |
| Brown Paint | Federal Color Standard 595, # 30111 |
| Brown-Gray Paint | Federal Color Standard 595, # 36306 |
| Dark Blue Paint | Federal Color Standard 595, # 15090 |
| Textured Concrete Finish Paint | Federal Color Standard 595, # 36440 |
| Weathered Brown Guide Rail Paint | Federal Color Standard 595, # 20059 |

Assistance in providing definitions for other colors is offered by the Materials Bureau.

BASIS OF ACCEPTANCE: The Engineer may require manufacturer's certification that the color provided meets the requirements of this specification.

708-06 PAINT FOR GALVANIZED SURFACES

SCOPE. This specification covers the materials requirements for paints to be applied over galvanized surfaces.

PAINT. Paint shall be a two-coat system with an polyamide epoxy primer and an aliphatic urethane, suitable for exterior use. The paints shall have a VOC level below 340 g/L or 2.8 lb/gal, shall be produced by the same manufacturer, and the prime and top coat shall be compatible. The primer shall be specifically formulated for use over galvanized surfaces.

BASIS OF ACCEPTANCE. The material shall be accepted with the submission of the technical data sheets and the manufacturer's certification ensuring compliance with this specification.

SECTION 729 - TEMPORARY TRAFFIC CONTROL DEVICES

729-01 DRUMS

SCOPE. This specification covers the material, fabrication, and performance requirements for traffic drums. Drums are defined by FHWA as a Category I device.

MATERIAL REQUIREMENTS. Drums shall conform to the requirements of the MUTCD, shall be NCHRP 350 or MASH approved and shall be orange plastic, one-piece or two-piece construction, with a closed top. Drums shall be a minimum of 18 inches in diameter (visible from all directions), a minimum of 36 inches in height. Drums shall have a maximum weight of 75 lbs., including ballast. Two-piece drums shall consist of a base no more than 4 inches in height and an upper section. The base and upper section of two-piece drums shall be designed as a unit. One-piece drums shall include a base ring or elongation designed to hold ballast. The base and/or any nonflexible portion of the drum shall not extend more than 2 inches above the pavement surface.

Drums shall have 4 horizontal circumferential stripes of reflective sheeting a minimum of 4 inches wide, of alternating orange and white, starting with orange on the top. The top edge of the upper band shall be a maximum of 2 inches from the top edge of the drum. The space between stripes shall not exceed 2 inches.

Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type I (Class A), ASTM Type III (Class B), or higher. Reflective sheeting shall be firmly bonded to the drum with an adhesive; mechanical fasteners to bond reflective sheeting to the drum will not be allowed.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-02 CONES

SCOPE. This specification covers the material, fabrication, and performance requirements for traffic cones. Cones are defined by FHWA as a Category I device.

MATERIAL REQUIREMENTS. Cones shall conform to the requirements of the MUTCD, shall be NCHRP 350 or MASH approved and shall be orange rubber or plastic. Cones shall have a maximum weight of 20 lbs, including ballast.

Standard cones shall be approximately 28 inches in height with a minimum conical bottom width of 10 inches. Standard cones shall have two horizontal circumferential stripes of white reflective sheeting, the upper a minimum of 6 inches wide, with the upper edge 3 to 4 inches from the top of the cone, and the lower a minimum of 4 inches wide with the upper edge approximately 2 inches below the upper stripe.

Tall cones shall be approximately 36 inches in height with a minimum conical bottom width of 10 inches. Tall cones shall have two horizontal circumferential stripes of white reflective sheeting, the upper a minimum of 6 inches wide, with the upper edge 3 to 4 inches from the top of the cone, and the lower a minimum of 4 inches wide with the upper edge approximately 2 inches below the upper stripe.

Extra tall cones shall be a minimum of 42 inches in height with a minimum conical bottom width of 7 inches. Extra tall cones shall have a minimum of four horizontal circumferential stripes of reflective sheeting from 4 to 6 inches wide, of alternating orange and white starting with orange on the top. The upper edge of the sheeting shall be 4 inches from the top of the cone. Nonreflective spaces between the stripes shall not exceed 3 inches wide.

Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type I (Class A), ASTM Type III (Class B) or higher. Reflective sheeting shall be firmly bonded to the cone with adhesive.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-03 TEMPORARY TUBULAR MARKERS

SCOPE. This specification covers the material, fabrication, and performance requirements for tubular markers. Tubular markers are defined by FHWA as a Category I device.

MATERIAL REQUIREMENTS. Tubular markers shall conform to the requirements of the MUTCD, shall be NCHRP 350 or MASH approved and shall be orange, with a minimum height of 36 inches and a minimum outside diameter of 2 inches. Tubular markers shall be circular or elliptical in cross section. Tubular markers shall have a maximum weight of 12 lbs, not including a mounting base.

The markers shall have two horizontal circumferential stripes of white reflective sheeting a minimum of 3 inches wide. The top edge of the upper band shall be a maximum of 2 inches from the top of the marker. The space between shall not exceed 6 inches.

Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type I (Class A), ASTM Type III (Class B) or higher. The sheeting shall be bonded to the post with a precoated, pressure-sensitive adhesive or a tack-free, heat-activated adhesive. Mechanical fasteners to bond reflective sheeting to the post will not be allowed.

For free-standing tubular markers, the base and/or any nonflexible portion of the marker shall not be more than 2 inches in height.

For tubular markers fastened to pavement, the bonding system used to shall be a fast-setting chemical compound, mastic-type material, or mechanical fastener capable of fixing the tubular marker to either concrete or asphalt pavement. The bonding system shall not present a hazard to traffic if the tubular marker or base unit becomes unfixed from the pavement.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-04 VERTICAL PANELS

SCOPE. This specification covers the material, fabrication, and performance requirements for vertical panels. Vertical panels are defined by FHWA as a Category II device.

MATERIAL REQUIREMENTS. Vertical panels shall conform to the requirements of the MUTCD, shall be NCHRP 350 or MASH approved and shall be constructed of plastic, aluminum, or other lightweight materials. Vertical panels shall be supported by a base capable of maintaining the panel in an upright position and in the proper position and orientation.

Vertical panels shall have 4 to 6 inch wide diagonal stripes of alternating orange and white reflective sheeting, sloping downward at an angle of 45° toward the side on which traffic is to pass. Vertical panels which are 36 inches and larger shall have 6 inch wide diagonal stripes.

Standard vertical panels shall be a minimum of 24 inches in height and a minimum of 8 inches in width. The top of the panel shall be mounted a maximum of 36 inches high. Support posts for standard vertical panels shall not be located on the traffic face of the panel.

Oversized vertical panels shall be a minimum of 36 inches in height and have a minimum reflective area of 2.0 square feet.

Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type I (Class A), ASTM Type III (Class B) or higher.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-05 STOP/SLOW PADDLES

SCOPE. This specification covers the material requirements for stop/slow paddles.

MATERIAL REQUIREMENTS. Stop/slow paddles shall conform to the requirements of the MUTCD and shall be constructed of plastic, aluminum, or other lightweight materials. Stop/slow paddles shall be a minimum of 24 inches wide and shall be mounted on a support staff with a minimum height of 6 feet to the bottom of the panel. Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type IX (Class E).

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-06 TYPE I CONSTRUCTION BARRICADES

SCOPE. This specification covers the material, fabrication, and performance requirements for Type I construction barricades. Type I construction barricades are defined by FHWA as a Category II device.

MATERIAL REQUIREMENTS. Type I construction barricades shall conform to the requirements of the MUTCD and shall be NCHRP 350 or MASH approved. Type I construction barricades shall be constructed of an A-frame with a single rail panel 8 to 12 inches wide and a minimum of 24 inches long. Rails on barricades used on expressways and other high-speed roadways shall have an area of at least 2.0 square feet. The top of the upper panel shall be mounted at a minimum height of 36 inches. Barricade frames shall be designed to maintain the proper orientation and location of the device during windy conditions. Non-rigid ballast may be placed on the frame, close to the ground, to hold the barricade in position, and shall not obscure the view of the rail panels to approaching traffic.

Barricade rail panels shall have 4 inch wide reflective, alternating orange and white diagonal stripes sloping at an angle of 45°. Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type I (Class A), ASTM Type III (Class B), or higher.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-07 TYPE II CONSTRUCTION BARRICADES

SCOPE. This specification covers the material, fabrication, and performance requirements for Type II construction barricades. Type II construction barricades are defined by FHWA as a Category II device.

MATERIAL REQUIREMENTS. Type II construction barricades shall conform to the requirements of the MUTCD and shall be NCHRP 350 or MASH approved. Type II construction barricades shall be constructed of a frame with two rail panels 8 to 12 inches wide and a minimum of 24 inches long. Rails on barricades used on expressways and other high-speed roadways shall have an area of at least 2.0 square feet. The top of the upper panel shall be mounted at a minimum height of 36 inches. Barricade frames shall be designed to maintain the proper orientation and location of the device during windy conditions. Non-rigid ballast may be placed on the frame, close to the ground, to hold the barricade in position, and shall not obscure the view of the rail panels to approaching traffic.

Barricade rail panels shall have 4 to 6 inch wide reflective, alternating orange and white diagonal stripes sloping at an angle of 45°. Barricade rail panels 36 inches and longer shall have 6 inch wide stripes. Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type I (Class A), ASTM Type III (Class B) or higher.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-08 TYPE III CONSTRUCTION BARRICADES

SCOPE. This specification covers the material, fabrication, and performance requirements for Type III construction barricades. Type III construction barricades are defined by FHWA as a Category II device.

MATERIAL REQUIREMENTS. Type III construction barricades shall conform to the requirements of the MUTCD and shall be NCHRP 350 or MASH approved. Type III construction barricades shall be constructed of a frame with three rail panels 8 to 12 inches wide and a minimum of 48 inches long. The top of the upper panel shall be mounted at a minimum height of 60 inches. Barricade frames shall be designed to maintain the proper orientation and location of the device during windy conditions. Nonrigid ballast may be placed on the frame, close to the ground, to hold the barricade in position, and shall not obscure the view of the rail panels to approaching traffic.

Barricade rail panels shall have 6 inch wide reflective alternating orange and white diagonal stripes sloping at an angle of 45°. Reflective sheeting shall conform to 730-05 *Reflective Sheeting* ASTM Type I (Class A), ASTM Type III (Class B) or higher.

Warning lights, when used, shall be securely mounted directly to the barricade frame, above the top rail, using a bolt, nut, and washer of sufficient strength to ensure that the light does not detach if impacted by a vehicle, and no part of the light or wiring shall cover the face of the rail. Batteries shall be placed at ground level, except that integral batteries weighing a maximum of 7 lbs may be mounted on the barricade frame. Warning lights shall not be attached to the barricade rail.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-09 TEMPORARY SIGN SUPPORTS

SCOPE. This specification covers the material, fabrication, and performance requirements for temporary sign supports. Temporary sign supports are defined by FHWA as a Category II device.

MATERIAL REQUIREMENTS. Temporary sign supports shall conform to the requirements of the MUTCD and shall be constructed in accordance with the Standard Sheets or shall be commercially manufactured, temporary sign supports that are NCHRP 350 or MASH approved.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-10 TEMPORARY IMPACT ATTENUATORS - REDIRECTIVE

SCOPE. This specification covers the material and performance requirements for temporary impact attenuators. Temporary impact attenuators are defined by FHWA as a Category III device.

MATERIALS REQUIREMENTS. Temporary impact attenuators shall be NCHRP 350 or MASH approved as a redirective, non-gating device. Temporary impact attenuators that use liquid or other materials as a filler or to provide ballast will be evaluated for potential environmental impacts and/or seasonal limitations. Temporary impact attenuators meeting the requirements of NCHRP 350 or MASH Test Level 2 are acceptable only as Test Level 2 devices. A Temporary impact attenuator accepted as a Test Level 3 device is also acceptable as Test Level 2 device. Temporary impact attenuators will be approved for use in shielding an object of a maximum width as specified in the Approved List, and specific configurations may be approved for maximum speeds. Approach ends of Temporary impact attenuators shall have impact attenuator markings in accordance with the MUTCD.

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|---|--------|
| Concrete Grouting Material | 701-05 |
| Anchoring Materials - Chemically Curing | 701-07 |

If a temporary foundation slab is required, concrete shall be Class A concrete conforming to Section 501 *Portland Cement Concrete - General*; reinforcing steel shall conform to §709-01 *Bar Reinforcement, Grade 420*.

BASIS OF APPROVAL. Manufacturers or material suppliers desiring to have Test Level 2 or Test Level 3 temporary impact attenuators approved shall prepare and submit copies of drawings, specifications, test reports, and Federal acceptance letters to the Director of the Materials Bureau. The review process requires a minimum of 30 calendar days. Upon approval, the name of the manufacturer and the product will be placed on the Approved List.

BASIS OF ACCEPTANCE. Test Level 2 or Test Level 3 temporary impact attenuators will be accepted on the basis of the product appearing on the Approved List and a material certification that the product is the same as the one appearing on the Approved List and that it conforms to this specification.

729-11 TEMPORARY IMPACT ATTENUATORS - GATING

SCOPE. This specification covers the material and performance requirements for temporary impact attenuators. Temporary impact attenuators are defined by FHWA as a Category III device.

MATERIALS REQUIREMENTS. Temporary impact attenuators shall be NCHRP 350 or MASH approved as a gating device. Temporary impact attenuators that use liquid or other materials as a filler or to provide ballast will be evaluated for potential environmental impacts and/or seasonal limitations. Temporary impact attenuators meeting the requirements of NCHRP 350 or MASH Test Level 2 are

acceptable only as Test Level 2 devices. A Temporary impact attenuator accepted as a Test Level 3 device is also acceptable as Test Level 2 device. Temporary impact attenuators will be approved for use in shielding an object of a maximum width as specified in the Approved List, and specific configurations may be approved for maximum speeds. Approach ends of Temporary impact attenuators shall have impact attenuator markings in accordance with the MUTCD.

Concrete Grouting Material

701-05

Anchoring Materials - Chemically Curing

701-07

If a temporary foundation slab is required, concrete shall be Class A concrete conforming to Section 501 *Portland Cement Concrete - General*; reinforcing steel shall conform to §709-01 *Bar Reinforcement, Grade 420*.

BASIS OF APPROVAL. Manufacturers or material suppliers desiring to have Test Level 2 or Test Level 3 temporary impact attenuators approved shall prepare and submit copies of drawings, specifications, test reports, and Federal acceptance letters to the Director of the Materials Bureau. The review process requires a minimum of 30 calendar days. Upon approval, the name of the manufacturer and the product will be placed on the Approved List.

BASIS OF ACCEPTANCE. Test Level 2 or Test Level 3 temporary impact attenuators will be accepted on the basis of the product appearing on the Approved List and a material certification that the product is the same as the one appearing on the Approved List and that it conforms to this specification.

729-12 TRUCK-MOUNTED AND TRAILER MOUNTED IMPACT ATTENUATORS

SCOPE. This specification covers the material and performance requirements for truck mounted impact attenuators or trailer mounted impact attenuators (TMIA's) mounted on the rear of work vehicles and barrier trailers. Impact attenuators are defined by FHWA as a Category III device.

MATERIALS REQUIREMENTS. TMIA's shall be NCHRP 350 or MASH approved. TMIA's meeting the requirements of NCHRP 350 or MASH Test Level 3 are also acceptable as a Test Level 2 device. TMIA's meeting the requirements of NCHRP 350 or MASH Test Level 2 are acceptable only as Test Level 2 devices. Approach ends of TMIA's shall have impact attenuator markings in accordance with the MUTCD.

BASIS OF APPROVAL. Manufacturers or material suppliers desiring to have products considered for inclusion on the Approved List shall prepare and submit copies of drawings, specifications, test reports, and Federal Acceptance Letters to the Director of the Materials Bureau. The review process requires a minimum of 30 calendar days. Upon approval, the name of the manufacturer and the product will be placed on the Approved List.

BASIS OF ACCEPTANCE. Test Level 2 or Test Level 3 TMIA's will be accepted on the basis of the product appearing on the Approved List and a material certification that the product is the same as the one appearing on the Approved List and that it conforms to this specification.

729-13 TEMPORARY SAND BARRELS

SCOPE. This specification covers the material and performance requirements for sand barrels. Sand barrels are defined by FHWA as a Category III device.

MATERIAL REQUIREMENTS. Sand barrels of each size module shall be NCHRP 350 or MASH approved. Sand barrels shall be yellow, durable, waterproof, ultraviolet-stable plastic. The first barrel in the array shall have impact attenuator markings in accordance with the MUTCD.

Sand barrels shall resist deformation from dynamic loadings due to vibration in the placement area and long-term stresses induced by thermal expansion/contraction and fill settlement. Sand barrels shall be free draining with respect to residual moisture in the fill sand. Lids shall divert precipitation and prevent moisture from entering the module. Lids shall be fastened or otherwise secured to provide a closed, reasonably vandal-resistant barrel.

The fill sand shall conform to the requirements of either 703-06 *Cushion Sand* or 703-07 *Concrete Sand*. Sodium chloride, as dry rock salt, equal to 3-5 % by weight of the sand, shall be thoroughly mixed into the sand. Sodium chloride shall meet the requirements of 712-03 *Sodium Chloride*.

BASIS OF APPROVAL. Manufacturers or material suppliers desiring to have products considered for inclusion on the Approved List shall prepare and submit copies of drawings, specifications, test reports, and Federal Acceptance Letters to the Director of the Materials Bureau. The review process requires a minimum of 30 calendar days. Upon approval, the name of the manufacturer and the product will be placed on the Approved List.

BASIS OF ACCEPTANCE. Sand barrels will be accepted on the basis of the product appearing on the Approved List and a material certification that the product is the same as the one appearing on the Approved List and that it conforms to this specification.

729-14 VEHICLE-ARRESTING SYSTEMS

SCOPE. This specification covers the material and performance requirements for vehicle-arresting systems. Vehicle-arresting systems are defined by FHWA as a Category III device.

MATERIAL REQUIREMENTS. Vehicle-arresting systems shall be NCHRP 350 or MASH approved.

BASIS OF APPROVAL. Manufacturers or material suppliers desiring to have products considered for inclusion on the Approved List shall prepare and submit copies of drawings, specifications, test reports, and Federal Acceptance Letters to the Director of the Materials Bureau. The review process requires a minimum of 30 calendar days.

BASIS OF ACCEPTANCE. Vehicle-arresting systems will be accepted on the basis of the product appearing on the Approved List and a material certification that the product is the same as the one appearing on the Approved List and that it conforms to this specification.

729-15 ARROW PANELS

SCOPE. This specification covers the material and performance requirements for arrow panels. Arrow panels are defined by FHWA as a Category IV device.

MATERIAL REQUIREMENTS. Arrow panels shall be signs with a matrix of illuminated elements capable of either flashing or sequential arrow displays that meets the requirements of the MUTCD. Arrow panels shall be equipped with a sign control console, mounted in a lockable, weather-resistant compartment.

Arrow panels shall not bear any advertising message or any other message that is not related to traffic control. A nonretroreflective logo or name and telephone number of the contractor or supplier may be located on the back of the arrow panel or on the arrow panel trailer. The logo shall not exceed 0.1 m².

The name and telephone number shall not exceed inches in height. The rear face of the arrow panel shall contain one or more clear lamp(s) to indicate that the arrow board is operating properly.

Truck-Mounted Series B. Arrow panels consist of a 60 x 30 inch rectangular panel mounted at a minimum of 5 feet above the roadway. The arrow display shall be legible at a minimum distance of 3/4 mile on a bright, sunny day or a clear night when the sight line is unobstructed.

Trailer-Mounted or Truck-Mounted Series C. Arrow panels consist of a 96 x 48 inch rectangular panel mounted at a minimum of 7 feet above the roadway for trailer mounted arrow panels and 5 feet above the roadway for truck mounted arrow panels. Arrow panels shall be powered by self-contained engine-driven generator systems, capable of energizing the arrow displays for 72 hours unattended and shall be capable of being powered by 110V AC supply; solar-powered, capable of energizing the arrow displays continuously for 21 days unattended; or powered by a truck. Arrow panel operation controls shall be mounted in a lockable enclosure. The arrow display shall be legible at a minimum distance of 1 mile on a bright, sunny day or a clear night when the sight line is unobstructed.

TESTING. Manufacturers or material suppliers desiring to have Truck-Mounted Series B arrow panels considered for inclusion on the Approved List shall submit a material certification that the arrow panel conforms to this specification and the requirements of the MUTCD, and provide an arrow panel to the Director, Materials Bureau in Albany for initial field testing. Field testing will include evaluation of arrow panel operation during various light conditions for brightness, legibility, and angularity. The review process requires a minimum of 30 calendar days.

Manufacturers or material suppliers desiring to have Trailer-Mounted or Truck-Mounted Series C arrow panels considered for inclusion on the Approved List shall submit test results from the AASHTO National Transportation Product Evaluation Program (NTPEP), a material certification that the arrow panel conforms to this specification and the requirements of the MUTCD, and provide an arrow panel to the Director of the Materials Bureau in Albany for initial field testing. Field testing will include evaluation of arrow panel operation during various light conditions for brightness, legibility, and angularity. The review process requires a minimum of 30 calendar days.

BASIS OF APPROVAL. Truck-Mounted Series B arrow panels meeting the requirements of this specification and having satisfactory initial field test results will be placed on the Approved List.

Trailer-Mounted or Truck-Mounted Series C arrow panels meeting the requirements of this specification and satisfactory initial field test results, as well as satisfactory NTPEP test results will be placed on the Approved List. Trailer-Mounted or Truck-Mounted Series C arrow panels for which NTPEP test results have not been submitted may be provisionally placed on the Approved List for a maximum of one year. After one year of provisional approval, the manufacturer may request an extension for one additional year based on a pending application filed with NTPEP for testing. No extensions of provisional approvals past two years will be granted. If satisfactory test results are not provided by the expiration date of the provisional approval, all units provided or in use shall be removed and replaced by the Contractor with approved units at no additional cost to the State. Arrow panels on the Approved List that have repeated poor evaluations will be removed from the Approved List.

BASIS OF ACCEPTANCE. Arrow panels will be accepted on the basis of the product appearing on the Approved List and a material certification that the product meets this specification and is the same as the one appearing on the Approved List.

729-16 PORTABLE VARIABLE-MESSAGE SIGNS (PVMS)

SCOPE. This specification covers the material and performance requirements for variable-message signs. Variable-message signs are defined by FHWA as a Category IV device.

MATERIAL REQUIREMENTS. Portable variable-message signs (PVMS) shall be tested by the National Transportation Product Evaluation Program (NTPEP) of the American Association of State and Highway Transportation Officials (AASHTO) demonstrating the arrow panel meets the requirements of this specification and the MUTCD. PVMS shall be trailer mounted and equipped for use on public highways in accordance with NYS Vehicle and Traffic Law. The unit shall operate primarily from a solar-powered electrical system and shall be capable of energizing the message display for a minimum of 21 days without auxiliary charge. The electrical system shall consist of batteries and a solar array panel and on-board auxiliary charging system to enable the batteries to be recharged via a 110V AC connection.

PVMS shall have a 3 line display with a minimum of 8 characters per line, and shall be capable of displaying 3 separate messages in a cyclical sequence. Characters shall be a minimum of 18 inches high.

PVMS shall be visible at a minimum distance of 1/2 mile during the day and at night. For highways with a posted pre-construction speed limit of 55 mph or greater, PVMS messages shall be legible from a minimum distance of 800 feet during the day, and 600 feet at night. For highways with a posted pre-construction speed limit of 50 mph or less, PVMS messages shall be legible from a minimum distance of 650 feet during the day. PVMS shall not bear any advertising message or any other message that is not related to traffic control. A nonretroreflective logo or name and telephone number of the contractor or supplier may be located on the back of the PVMS or on the PVMS trailer. The logo shall not exceed 1 square foot. The name and telephone number shall not exceed 2 inches in height.

PVMS shall be equipped with a sign control console, mounted in a lockable, weather-resistant compartment. The sign controller shall have programmable memory capable of storing messages pertinent to planned construction activities, including emergency messages. The controller shall be equipped with 14 day calendar programming capability, providing the ability to start and stop the display of a minimum of three (3) different messages on a repeating schedule without an operator present. The controller shall be capable of producing an accurate log of all messages and the times they were displayed. The controller shall have programmable messages, display rate, and display interval settings. The controller shall blank the sign if the output voltage drops below the manufacturer's recommended output level.

PVMS shall be equipped with control software using a Microsoft Windows operating system. The Contractor shall supply the Engineer with two copies of operating instructions for the PVMS and the control software. Electronic copies of software instructions are acceptable.

A. Light-Emitting Diode (LED) Type. LED type PVMS shall have light-emitting diodes arranged in arrays and the arrays shall be arranged in a matrix for each character to be 7 pixels high by 5 pixels wide. The LED display shall have the ability to display characters at a minimum height of 18 inches. The controller shall provide a means of dimming the pixels.

B. Hybrid Flip-Disk Type. Hybrid, flip-disk type PVMS shall have pixels consisting of individual electromagnetic disks with at least two (2) high-output amber LEDs. The disk face shall be covered with yellow prismatic retroreflective sheeting or an approved equal. The PVMS shall operate using both flip-disk and light-emitting diode (LED) during nighttime and low-light periods. The hybrid flip disk type shall be arranged in a matrix of 7 disks high by 5 disks wide for each character.

C. Cellular Communications Option. PVMS with cellular communications shall be equipped with a cellular telephone with cellular service and a modem capable of remotely operating the control software. The phone numbers for PVMS on a contract shall be sequential whenever possible to facilitate remote control of multiple devices. The unit shall accept a land line telephone connection mode without rewiring or modification.

D. Radar Option. The PVMS with radar shall be equipped with a radar speed detection option, providing the system with the ability to determine the speed of an approaching vehicle and interrupt

the programmed sequence with a special default message displaying the vehicle's speed. The unit shall collect and store vehicle speed data for retrieval.

E. NTCIP Communication Protocol Option. PVMS units that will be operated by the Department, typically from a Transportation Management Center (TMC), shall be equipped with communications and control systems that are National Transportation Communications for ITS Protocol (NTCIP) compliant.

TESTING. Manufacturers or material suppliers desiring to have PVMS considered for inclusion on the Approved List shall submit test results from the AASHTO National Transportation Product Evaluation Program (NTPEP), a material certification that the PVMS conforms to this specification and the requirements of the MUTCD, and provide a PVMS to the Director, Materials Bureau in Albany for initial field testing. Field testing will include evaluation of PVMS operation during various light conditions for brightness, legibility, and angularity. The initial testing process requires a minimum of 30 calendar days.

BASIS OF APPROVAL. PVMS meeting the specification, having satisfactory NTPEP test results, and having satisfactory initial field test results will be placed on the Approved List.

PVMS meeting the specification, and having satisfactory initial field test results, that do not have NTPEP test results may be provisionally placed on the Approved List for a maximum of one year. After one year of provisional approval, the manufacturer may request an extension for one additional year based on a pending application filed with NTPEP for testing. No extensions of provisional approvals past two years will be granted. No extensions of provisional approvals will be granted. If satisfactory test results are not provided by the expiration date of the provisional approval, all units provided or in use shall be removed and replaced by the Contractor with approved units at no additional cost to the State. PVMS on the Approved List that have repeated poor evaluations will be removed from the Approved List.

BASIS OF ACCEPTANCE. PVMS will be accepted on the basis of the product appearing on the Approved List and a material certification that the product meets this specification and is the same as the one appearing on the Approved List.

729-17 TEMPORARY GLARE SCREENS

SCOPE. This specification covers the material and performance requirements for temporary glare screens. Glare screens are not defined separately by FHWA, but rather are considered a system component.

MATERIAL REQUIREMENTS. Temporary glare screens shall consist of a opaque screen on a horizontal base which is, in turn, mounted on a concrete barrier. The system shall be modular to allow flexible use and ease of maintenance.

The screen shall be constructed of durable, lightweight, flexible, weather-resistant and impact-resistant materials of a single, uniform dark color. The minimum height of the screen shall be approximately 24 inches. The screen shall be reflectorized at a uniform maximum spacing of 40 feet. If barrier delineation is blocked, the screen shall be reflectorized on both sides with a 3 inch wide by 6 inch high (minimum) piece of reflective sheeting, ASTM Type I (Class A), ASTM Type III (Class B), or higher. Yellow reflective sheeting shall be used facing traffic which is to pass to the right of the glare screen. White reflective sheeting shall be used facing traffic which is to pass to the left of the glare screen.

Individual temporary glare screen modules shall not span a joint between concrete barrier sections, and bases shall not overhang the face of the barrier. Temporary glare screens shall not have any horizontal rigid members that could potentially spear an impacting vehicle, or shall be NCHRP 350 or MASH approved if the system has horizontal rigid members.

The base shall have sufficient rigidity to facilitate ease of handling and proper screen support and position. The connection of the base to the vertical components shall prevent unintentional screen rotation or dislocation. The base shall be properly secured to prevent it from being dislodged upon impact.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-18 WARNING LIGHTS

SCOPE. This specification covers the material and performance requirements for warning lights. Warning lights are not defined separately by FHWA, but rather are considered a system component.

MATERIAL REQUIREMENTS. Warning lights shall be mounted on signs or channelizing devices in a manner that, if hit by an errant vehicle, they will not be likely to penetrate the windshield. Warning lights shall be Type A (low-intensity flashing), Type B (high-intensity flashing), or Type C (steady-burning). Warning lights shall meet the requirements of the MUTCD Section 6F.83 and the ITE *Purchase Specification for Flashing and Steady Burn Warning Lights*. Warning lights shall have a minimum nominal diameter of 7 inches and shall emit yellow light. Flashing warning lights shall flash between 55 and 75 times per minute. Flashing warning lights required to operate 24 hours per day shall be Type B. Steady-burning warning lights shall operate from one-half hour after sunset to one-half hour before sunrise. Warning lights shall have a minimum mounting height of 30 inches to the bottom of the lens. Warning lights shall be powered by batteries, line power, or solar cells adequate to maintain the required luminance during all periods of required operation.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

729-19 AUTOMATED FLAGGER ASSISTANCE DEVICES

SCOPE. This specification covers the material and performance requirements for automated flagger assistance devices (AFAD) designed to control road users through work zones to be remotely operated by a flagger. AFADs are defined by FHWA as a Category IV device.

MATERIAL REQUIREMENTS. AFADs shall meet the requirements of the MUTCD. Each AFAD shall consist of a remotely controlled self-contained trailer or movable cart consisting of *STOP/SLOW* signs or *RED/YELLOW* lenses.

Stop/Slow Sign AFAD shall consist of:

- A STOP/SLOW sign (R1-1/W20-8) having an octagonal shape of at least 36 x 36 inch with letters at least 12 inches high.
 - One red stop beacon, 12 inch diameter red Light Emitting Diode (LED), mounted above the *STOP* sign.
 - At least one amber beacon, 12 inch diameter amber Light Emitting Diode (LED) or Type B high-intensity flashing warning light mounted above, below or to the side(s) of the *SLOW* sign.
- A gate arm capable of extending up to 8.5 feet.
- *WAIT ON STOP* (R1-7) and *GO ON SLOW* (R1-8) signs mounted under the *STOP/SLOW* sign.
 - *WAIT ON STOP* sign shall be a 24 x 30 inches with black legend and black border on a white background with letters at least 2 inches high.

- *GO ON SLOW* sign shall be a 24 x 30 inches with black legend and black border on a white background with letters at least 2 inches high.
- All sign sheeting shall conform to §730-05 *Reflective Sheeting* ASTM Type IX (Class E).

RED/Yellow Lens AFAD shall consist of:

- Circular red and circular yellow 12 inch diameter Light Emitting Diode (LED) displays.
- A gate arm capable to extend up to 8.5 feet.
- STOP HERE ON RED sign (R10-6) 24 x 30 inches.
- All sign sheeting shall conform to §730-05 *Reflective Sheeting* ASTM Type IX (Class E).

The AFADs shall be controlled by a single flagger with a remote control, which shall allow safe operation of two AFADs remotely, employ bi-directional communications to verify each command sent from the handheld was successfully received, be equipped with conflict monitoring to prevent displaying a SLOW message simultaneously in both directions, permit an override feature to allow a simultaneous slow display, and show the current status of each AFAD. The control console and power supply shall be housed in a locked compartment. Each trailer/cart shall be equipped with a remote control warning horn alerting workers of intruding vehicles.

Trailers/carts shall display a minimum of 2 inch wide band of reflective sheeting on all four sides of the trailer. Reflective sheeting shall conform to §730-05 *Reflective Sheeting* ASTM Type III (Class B), ASTM Type VII (Class C) or ASTM Type IX (Class E). The sheeting need not be continuous, but the sum of the length of the segments shall be at least one-half the length of the trailer. AFADs shall not bear an advertising message(s) or any other message that is not related to traffic control. A nonretroreflective logo or name and telephone number of the contractor or supplier not to exceed 1.0 square feet may be located on the trailer or cart. The name and telephone number shall not exceed 2 inches in height.

BASIS OF APPROVAL. Manufacturers or material suppliers desiring to have AFADs be considered for inclusion on the Approved List shall submit a material certification that the AFADs meet this specification and the requirements of the MUTCD, as well as provide one AFAD for initial field testing to the Director of the Materials Bureau in Albany for review. Initial field testing will include evaluating the AFADs for operation, sign visibility/legibility, retractable arm functionality/visibility and beacon/warning light brightness and angularity. The review process requires a minimum of 30 calendar days.

AFADs having acceptable certifications and satisfactory initial field test results will be placed on the Approved List. AFADs that consistently have repeated poor evaluations will be removed from the approved list.

BASIS OF ACCEPTANCE. AFADs will be accepted on the basis of the product appearing on the Approved List and a material certification that the product is the same as the one appearing on the Approved List and that it conforms to this specification.

729-20 PORTABLE TRAFFIC SIGNALS

SCOPE. This specification covers the material and performance requirements for portable traffic signals. Portable traffic signals are defined by FHWA as a Category IV device.

MATERIAL REQUIREMENTS. Portable traffic signals shall meet the requirements of the MUTCD. Portable traffic signals shall consist of two self-contained, trailer-mounted traffic signals, each with a vertical signal mast, horizontal mast arm and two - 3 section traffic signal heads. Each traffic signal head shall have 12 inch diameter circular red, yellow and green Light Emitting Diode (LED) modules.

The portable traffic signal system shall be able to function continuously and independent of utility power sources. The signal control console and power supply shall be housed in a locked compartment.

The traffic signal controller shall be password protected, capable of providing traffic-actuated control with microwave detector sensors, have a built-in conflict monitor to prevent the display of conflicting indications, shall be hard-wired or radio-controlled to keep the signal indications synchronized, and have adequate phasing to serve expected traffic movements.

Trailers shall display a minimum of 2 inch wide band of reflective sheeting on all four sides of the trailer. Reflective sheeting shall conform to §730-05 *Reflective Sheeting* ASTM Type III (Class B), ASTM Type VII (Class D) or ASTM Type IX (Class E). The sheeting need not be continuous, but the sum of the length of the segments shall be at least one-half the length of the trailer. Portable traffic signals shall not bear an advertising message(s) or any other message that is not related to traffic control. A nonretroreflective logo or name and telephone number of the contractor or supplier may be located on the portable traffic signal trailer. The logo shall not exceed 1.0 square feet. The name and telephone number shall not exceed 2 inches in height.

BASIS OF APPROVAL. Manufacturers or material suppliers desiring to have Portable Traffic Signals considered for inclusion on the Approved List shall submit a material certification that the Portable Traffic Signal meets this specification and the requirements of the MUTCD, as well as one portable traffic signal for initial field testing to the Director of the Materials Bureau in Albany for review. Initial field testing will include evaluating the traffic signal system for phasing, clearances, detector operation and layout of the signal faces for brightness and angularity. The review process requires a minimum of 30 calendar days. Portable traffic signals having acceptable certifications and satisfactory initial field test results will be placed on the Approved List.

Portable traffic signals on the Approved List that consistently have poor evaluations will be removed from the Approved List.

BASIS OF ACCEPTANCE. Portable traffic signals will be accepted on the basis of the product appearing on the Approved List and a material certification that the product is the same as the one appearing on the Approved List and that it conforms to this specification.

729-21 TEMPORARY OVERLAY MARKERS

SCOPE. This specification covers the material and performance requirements for temporary overlay markers.

MATERIAL REQUIREMENTS. Temporary overlay markers are flexible polymer “L” shaped road reflectors with an adhesive on its base to adhere to the pavement surface. Temporary overlay markers are approximately 4 inches wide by 2 inches high with at least a 1 inch base. Yellow temporary overlay markers have a yellow reflective sheeting strip a minimum of ¼ inch in height at the top of the vertical section on both sides. White temporary overlay markers have a white reflective strip a minimum of ¼ inch in height at the top of the vertical section on one side only. Reflective sheeting shall conform to §730-05 *Reflective Sheeting* ASTM Type III (Class B), ASTM Type V (Class C), ASTM Type VII (Class D) or ASTM Type IX (Class E).

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

SECTION 730 - SIGNS AND DELINEATORS

730-01 ALUMINUM SIGN PANELS

SCOPE. These specifications cover aluminum sign panels used as the prepared surface backing in the application of reflective sheeting for location markers, delineators and traffic signs.

MATERIAL REQUIREMENTS. The panel material shall be either Aluminum Alloy 6061-T6, 5154-H38, 5052-H38 or 3004-H38 and shall conform to the requirements of material specification 715-04, Wrought Aluminum.

FABRICATION

Preparation of Panel Surface for Reflective Sheeting. The surface preparation of panels for the application of Reflective Sheeting, 730-05, shall be performed by Method I or Method II, in strict accordance with the recommendations of the manufacturer of the reflective sheeting.

A. Method I

1. Cleaning (Vapor or Alkaline cleaning)

a. Vapor Cleaning. By total immersion of the sheeting or sign panel in a saturated vapor of trichlorethylene or perchlorethylene. Trademark printing shall be removed with lacquer thinner. Follow with a thorough rinse.

b. Alkaline Cleaning. Sheeting shall be immersed in a tank containing alkaline solutions, controlled and titrated to the solution manufacturer's specifications. Immersion time shall depend upon the amount of soil present and the gage of the metal. Follow with a thorough rinse.

NOTE: After cleaning and rinsing and prior to etching, the aluminum sheeting shall be checked with a "Water Break Test" as follows: If the metal is clean, water will completely cover the surface with no breaks. Whenever water breaks, oil is present and the plate shall be recleaned until all traces of oil disappear. The surface near the edges shall be examined with extreme care for presence of oil.

2. Etching (Use Acid or Alkaline Etch)

a. Acid Etch. Etch in a 6% to 8% phosphoric acid solution at 100°F. Rinse thoroughly with running cold water followed by hot water tank rinse.

b. Alkaline Etch. Etch the pre-cleaned aluminum surface in alkaline etching material that is controlled by titration, use time, temperature and concentration specified by the solution manufacturer. Rinse thoroughly, remove smut with an acidic chromium compound type solution as specified by the solution manufacturer and then thoroughly rinse.

B. Method II

Cleaning and Etching. Use a chemical conversion treatment in accordance with the requirements of Military Specification MIL-C-5541A, Chemical Films and Chemical Film Materials for Aluminum and Aluminum Alloys, or later addenda. Following the etching and rinsing, panels shall be dried by a forced hot air dryer or by immersion for one minute, in circulating hot water at 180°F and allowed to air dry.

Application of Reflective Sheeting. The metal shall not be handled between all cleaning operations and applications of the reflective sheeting except by device or clean canvas gloves.

Immediately prior to the application of the reflective sheeting, the aluminum panel shall be prepared as specified in Method I or Method II. The reflective sheeting shall be adhered to the aluminum panel by the vacuum applicator process or mechanical process in strict accordance with the recommendations of the manufacturer of the reflective sheeting.

BASIS OF ACCEPTANCE. Aluminum panels may be accepted on the basis of the manufacturer's certification that his/her product conforms to all of the above specifications. However, the Department reserves the right to conduct tests, upon aluminum panels supplied. When tests are to be made, all test samples without reflective sheeting applied shall be submitted to the Materials Bureau. The number of samples shall comprise approximately one percent of the number of panels. Each sample shall contain a minimum area of 1 square foot for each thickness of panel used. Failure of the samples to meet all the requirements of the above specifications shall be cause for rejection of the aluminum panels represented by such samples.

730-02 TEMPORARY PLYWOOD SIGN PANELS

SCOPE. These specifications cover plywood sign panels used for temporary signs in work zones.

MATERIAL REQUIREMENTS. Temporary plywood sign panels shall be fabricated from exterior type plywood with a medium density overlay. Plywood shall be a minimum of 1/2 inch thick. The backs and edges of temporary plywood sign panels shall be painted white.

The surface of temporary plywood sign panels to be overlaid with reflective sheeting shall be prepared in accordance with the manufacturer's requirements.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

730-03 TEMPORARY RIGID LIGHTWEIGHT SIGN PANELS

SCOPE. This specification covers the material requirements for rigid lightweight sign panels used in the fabrication of temporary construction signs no larger than 4 x 4 feet.

MATERIAL REQUIREMENTS. Temporary rigid lightweight plastic sign panels shall consist of at least two parallel surfaces of plastic, aluminum or composite separated by plastic foam, filler or stiffeners/spacers; a single piece of plastic extrusion simulating this construction; or other lightweight composites to be overlaid with reflective sheeting. External stiffeners may be used to provide strength or to attach the panel to posts. Sign panels shall not deflect from the flat surface plane more than 1/4 inch at any point. Sign panels shall not warp and flex in a manner that reduces the required sign legibility and/or conspicuity.

If through bolting is used to attach the panel to the stiffeners, or to attach the panel directly to the posts, the bolt heads shall be provided with clear washers to minimize obscuring the legend. The backs of temporary rigid lightweight plastic sign panels shall be a uniform light color or shall be painted white.

The surface of temporary rigid lightweight sign panels to be overlaid with reflective sheeting shall be prepared in accordance with the manufacturer's requirements.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

730-04 (VACANT)

730-05 REFLECTIVE SHEETING

SCOPE. These specifications cover reflective sheeting for use in the fabrication of highway and construction signs, delineators and other traffic control devices.

GENERAL. The reflective sheeting supplied shall be colored, flexible, weather resistant, and shall have a smooth outer surface. If the reflective sheeting contains spherical lens elements, the lens elements shall be embedded within a transparent plastic, so as to produce a smooth, flat outer surface. All sheeting shall be of good appearance, free from ragged edges, cracks, scales, blisters, or other defects.

The back of the reflective sheeting shall be protected by a removable liner and shall include a precoated pressure-sensitive or a heat-activated adhesive, either of which may be applied without the necessity of additional adhesive tack coats on the reflective sheeting or application surface.

Reflective sheeting shall be one of the following ASTM D4956 types:

730-05.01 - ASTM Type I (Class A). A medium-intensity reflective sheeting often referred to as engineer grade. It is recommended for highway signs, except where high reflectivity is required, and for construction barricades, panels, and other work zone devices.

730-05.02 - ASTM Type III (Class B). A high-intensity reflective sheeting often referred to as high intensity. It is recommended for highway signs, construction signs, delineators, and other work zone devices.

730-05.03 - ASTM Type V (Class C). A super-high-intensity reflective sheeting recommended for delineators, construction barricades, and vertical panels. This material is not recommended for highway or construction zone sign faces.

730-05.04 - Fluorescent Orange (Class D). A fluorescent orange-colored sheeting with reflective properties similar to Class B high intensity. This sheeting is only recommended for use on orange-colored construction signs, and for the orange portions of construction barricades, vertical panels, and other work zone devices with rigid substrates, when a high level of conspicuity or visibility is needed.

730-05.05 - ASTM Type IX (Class E). A very-high-intensity retroreflective sheeting having highest retroreflective characteristics at short road distances. Recommended for permanent signs, delineators, construction zone devices, and vertical panels, when a high level of conspicuity or visibility is needed.

| TABLE 730-05-1 FLUORESCENT SHEETING REQUIREMENTS | | | | | | | | | |
|---|------------------------------------|----------------------|--|--|----------|----------|----------|----------|----------|
| Fluorescent Color | Luminance Factor (Y %) Min. | | Maximum Spectral Radiance Factor(%) | Color Specification Limits ¹ | | | | | |
| | | | | 1 | 2 | 3 | 4 | | |
| | Y_t | Y_f | | x | y | x | y | x | y |
| Orange | 25 | 15 | 110.0 | 0.583 | 0.416 | 0.535 | 0.400 | 0.595 | 0.351 |
| Yellow | 45 | 20 | ----- | 0.479 | 0.520 | 0.446 | 0.483 | 0.512 | 0.421 |
| Yellow Green | 60 | 20 | ----- | 0.387 | 0.610 | 0.369 | 0.546 | 0.428 | 0.496 |
| | | | | 0.460 | 0.540 | | | | |

NOTE: 1. Four pairs of chromaticity coordinates determine acceptable color in terms of the CIE, 1931 Standard Colorimetric System measured with Standard Illuminant D₆₅.

MATERIAL REQUIREMENTS. Reflective sheeting shall meet the requirements of ASTM D4956 and the following:

1. Fluorescent Colors. Shall conform to the requirements of Table 730-05-1.

2. Fluorescent Orange Class D - 730-05.04. Class D fluorescent orange reflective sheeting:

A. Coefficient of Retroreflection (R_A). The coefficient of retroreflection shall meet or exceed the reflectivity requirements indicated in Table 730-05-2.

| TABLE 730-05-2 FLUORESCENT ORANGE COEFFICIENT OF RETROREFLECTION, R_A | | |
|---|--------------------|--|
| Observation Angle (°) | Entrance Angle (°) | Minimum R_A (cd/fc/ft ²) |
| 0.2 | - 4 | 100.0 |
| 0.2 | + 30 | 34.0 |
| 0.5 | - 4 | 64.0 |
| 0.5 | + 30 | 22.0 |

B. Daytime Color. The color shall conform to the requirements for luminance factor, maximum spectral radiance factor (peak reflectance), and color specification limits indicated in Table 730-05-1. Color measurements shall be determined in accordance with ASTM E991, using instrumentation which has circumferential viewing (illumination). Calculations shall be performed in accordance with ASTM E308 for the CIE 1931 2E standard observer.

C. Artificial Weathering. After 1500 hours of artificial weathering performed in accordance with ASTM G 26, Method A, using a Type B weatherometer, the following requirements shall be met:

- The minimum coefficient of retroreflection shall be 55.0 cd/fc/ft² at 0.2 degree observation angle; - 4 degree entrance angle.
- The luminance factor (Y Percent) shall be from 20.0 to 45.0.
- The maximum spectral radiance factor (peak reflectance) shall not be less than 60.0 percent.
- The color specification limits shall conform to the requirements shown above in Class D, *B. Daytime Color*.

3. Type IX (Class E) - 730-05.05. All colors shall conform to the requirements of ASTM D4956, except fluorescent colors. Fluorescent colors shall conform to the requirements of Table 730-05-1 and Table 730-05-3 of this specification.

| TABLE 730-05-3 COEFFICIENT OF RETROREFLECTION (R_A) (cd/fc/ft ²) | | | | | |
|--|--------------------|-----------------------|-----|-----|-----|
| | Entrance Angle (°) | Observation Angle (°) | | | |
| | | 0.1 | 0.2 | 0.5 | 1.0 |
| Fluorescent Orange | - 4 | 200 | 115 | 72 | 24 |
| | + 30 | 110 | 34 | 22 | 14 |
| Fluorescent Yellow | - 4 | 400 | 240 | 165 | 45 |
| | + 30 | 250 | 150 | 75 | 24 |
| Fluorescent Yellow-Green | - 4 | 540 | 325 | 235 | 65 |
| | + 30 | 380 | 200 | 105 | 35 |

FABRICATION. The reflective sheeting shall be so fabricated as to allow easy cutting to specified sizes and shapes.

The sheeting surface shall be solvent resistant and shall permit solvent cleaning. All solvents used for cleaning operations shall be as recommended by the sheeting manufacturer and shall comply with all Federal, State, and Local air quality regulations.

To ensure uniform appearance and brilliance under both nighttime and daytime conditions, the reflective sheeting shall be cut, matched and positioned on the prepared sign panel or other substrate in strict accordance with the recommendations of the sheeting manufacturer. Backgrounds, characters, delineators, etc., shall be coated and/or edge sealed in accordance with the recommendations of the sheeting manufacturer. When

performed, coating operations shall be done in a workmanlike manner so as to create an even, clear, uniform coat which shall be free of streaks, drops or other defects which might affect reflectivity.

Reflective sheeting shall be furnished in both rolls and sheets. Rolls shall be packed individually and contain not more than four splices per 150 feet linear measurement. Cut sheets shall be packaged flat and in such a manner as to minimize any damage or defacement that may occur to the sheeting during shipment or storage. The sheeting surface shall be capable of being readily processed and be compatible with recommended transparent and opaque process inks. The finished sheeting surface shall show no loss of the color with normal handling, cutting and application.

TESTING. Outdoor test specimen panels shall include both unprocessed reflective sheeting and reflective sheeting processed with the manufacturer's recommended transparent and opaque inks. Type I (Class A), Type III (Class B), and Type IX (Class E), except Type IX fluorescent orange, reflective sheetings shall be exposed outdoors on a test deck for a minimum 3-year continuous time period. Class D and Type IX (Class E) fluorescent orange sheeting shall be exposed outdoors on a test deck for a minimum 1 year continuous time period. Outdoor exposure testing will not be required for Type V (Class C) reflective sheeting.

Outdoor testing shall consist of exposing reflective sheeting test specimen panels, facing south, and inclined at an angle of 45° from a horizontal position. The test deck facility shall be located in a climate similar to that in which the material is intended to be used, or at a site approved by the Materials Bureau. Testing shall be performed by an independent testing agency or in conjunction with the National Transportation Product Evaluation Program (NTPEP).

Following the specified outdoor exposure time period, all weathered test panels of reflective sheeting shall meet the following performance requirements. The sheeting on the test panels shall show no appreciable adhesion loss, cracking, blistering, crazing, dimensional change, or color change. The minimum percent retained coefficient of retroreflection (R_A) shall be as specified below when compared to a control unexposed specimen counterpart. The control specimen reflectivity values (R_A) shall be measured at the start of outdoor exposure testing. Measurements shall be taken at 0.2 degree observation angle; - 4 degree entrance angle.

| TABLE 730-05-4 MINIMUM PERCENT RETAINED COEFFICIENT OF RETROREFLECTION (R_A) | |
|--|-----|
| Type I (Class A) Materials Designation 730-05.01 | 50% |
| Type III (Class B) Materials Designation 730-05.02 | 80% |
| Class D (Materials Designation 730-05.04) | 50% |
| Type IX (Class E) Materials Designation 730-05.05 | 60% |

BASIS OF ACCEPTANCE. Approvals will be based upon independent laboratory analysis and outdoor exposure testing conducted in accordance with this specification. If the reflective sheeting passes the requirements for laboratory and outdoor exposure testing, the product will then be placed on the Department's "Approved List" of materials. Detailed requirements and procedures for approval are available from the Materials Bureau.

Contract acceptance of Type I (Class A), Type III (Class B), Type IX (Class E), and Class D reflective sheetings will be based on the inclusion of the sheeting material on the Department's "Approved List" of reflective sheeting materials and the manufacturer's certification of compliance with this specification.

Contract acceptance of Type V (Class C) reflective sheeting will be based on the manufacturer's certification of compliance with this specification.

730-06 THRU 730-09 (VACANT)

730-10 ACRYLIC PLASTIC REFLEX REFLECTORS

SCOPE. This specification covers acrylic plastic prismatic reflectors for delineators.

MATERIAL REQUIREMENTS

Delineator Reflector Lens. Delineator reflectors shall consist of a clear and transparent acrylic plastic face, herein referred to as the lens, with a heat plastic or plastic coated foil back fused to the lens under heat and pressure around the entire perimeter of the lens, and the central mounting hole, to form a unit permanently sealed against dust, water, and water vapor. The lens shall consist of a smooth front surface, free from projections or indentation, other than a central mounting hole and identification, with a rear surface bearing a prismatic configuration such that it will effect total internal reflection of light. The manufacturer's trademark shall be molded legibly into the reflector.

Definitions and Optical Requirements

A. Entrance Angle. Shall mean the angle at the reflector between the direction of light incident on it and the direction of reflector axis.

B. Observation Angle. Shall mean the angle at the reflector between observers line of sight and direction of light incident on the reflector.

C. Specific Intensity. Shall mean luminous intensity (candelas) returned at the chosen observation angle by a reflector for each footcandle of illumination at the reflector.

Optical Test Procedure. The reflex reflector to be tested shall be located at a distance of 100 feet from a single uniformly bright light source having an effective diameter of 2 inches the light source shall be operated at approximately normal efficiency. The return light from the reflector shall be measured by means of a photo-electric photometer having a minimum sensitivity of 1×10^{-7} footcandles per scale division.

The photometer shall have a receiver aperture 1/2 inch diameter shielded to eliminate stray light. The distance from light source center to aperture center shall be 2 inches for 1/10 degree observation angle, and 7 inches for a degree observation angle.

If a test distance other than 100 feet is used, the source and aperture dimensions and the distance between source and aperture shall be modified accordingly.

Seal Test. Submerge 50 samples in water bath at room temperature. Subject the submerged samples to a vacuum of 5 inch gage for five minutes. Restore atmospheric pressure and leave sample submerged for five minutes, then examine the samples for water intake. Evidence of moisture or water intake on more than two (2) samples shall be cause for rejection of the lot represented by the samples.

Heat Resistance. Three reflectors shall be tested for four hours in a circulating air oven at $175 \pm 5^{\circ}\text{F}$. The test specimens shall be placed in a horizontal position on a grid or perforated shell permitting free air circulation. At the conclusion of the test the samples shall be removed from the oven and permitted to cool to room temperature. The samples after exposure to heat shall show no significant change in shape and general appearance when compared with unexposed control standards. No failures will be permitted.

| TABLE 730-10-1 OPTICAL REQUIREMENTS | | | | | |
|--|-----------------------------------|---|---------------|------------|--------------|
| Observation Angle Degrees | Entrance Angle Degrees | Specific Intensity, Candela/footcandle | | | |
| | | Crystal | Yellow | Red | Green |
| 1/10 | 0 | 119 | 71 | 29 | 29 |

| | | | | | |
|------|----|----|----|----|----|
| 1/10 | 20 | 47 | 28 | 11 | 11 |
| 1/3 | 0 | 20 | 12 | 5 | 5 |
| 1/3 | 20 | 8 | 5 | 2 | 2 |

NOTE: Failure of reflectors to equal or exceed the minimum specific intensity value shall constitute failure of the reflector being tested; failure of more than 2 reflectors out of 50 being subjected to test shall constitute failure to the lot represented by the samples. The specific intensity of delineator reflectors shall meet the above noted values, regardless of reflector orientation.

BASIS OF ACCEPTANCE. Acrylic plastic reflex reflectors will be accepted on the basis of the manufacturer's certification that their product conforms to all of the above detailed specifications. However, when the Department requires that tests be made, samples shall be submitted to the Materials Bureau. Fifty-three (53) samples will be selected at random from each shipment received from the reflector manufacturer. Each shipment may contain more than one lot. These samples shall be tested as specified above. Failure of the samples to meet all the requirements of the above specifications shall be cause for rejection of delineators represented by such samples.

730-11 (VACANT)

730-12 REFLECTORIZED SHEETING SIGN CHARACTERS (TYPE IV)

SCOPE. These specifications cover the material requirements for Type IV reflectorized sheeting sign characters.

MATERIAL REQUIREMENTS. Type IV characters shall consist of cutout reflective sheeting material meeting the requirements of 730-05 Reflective Sheeting, Materials Designation 730-05.02 (Class B).

Characters or borders shall be applied directly to clean, dust-free reflective sheeting background panels. Characters or borders shall be applied mechanically with equipment and in a manner specified by the sheeting manufacturer. Borders shall be cut neatly and butt-joined at corners and panel joints.

TESTING. The Department reserves the right to conduct tests on samples taken by a representative of the Department as follows: 2% or a minimum of five (5) characters (whichever is the greater) for each size character used; and 2% or a minimum of 2 ft of border (whichever is greater) for each width of border used.

When performed, tests will be conducted in accordance with §730-05 Reflective Sheeting.

BASIS OF ACCEPTANCE. Type IV characters will be accepted on the basis of a material certification that the product conforms to this specification.

730-13 REFLECTORIZED SHEETING SIGN CHARACTERS (TYPE V)

SCOPE. These specifications cover the material requirements for Type V reflectorized sheeting sign characters.

MATERIAL REQUIREMENTS. Type V characters shall consist of a painted, screened, or reverse-screened application of paint, paste, or transparent color of a type and in a manner recommended by the manufacturer of the reflective material.

Reflective material used for reverse-screened signs shall meet the requirements of ' 730-05 Reflective Sheeting, Materials Designation 730-05.02 (Class B).

TESTING. The Department reserves the right to conduct tests on samples taken by a representative of the Department as follows: 2% or a minimum of five (5) characters (whichever is the greater) for each

size character used; and 2% or a minimum of 2 ft of border (whichever is greater) for each width of border used.

When performed, tests will be conducted in accordance with §730-05 Reflective Sheeting.

BASIS OF ACCEPTANCE. Type V characters will be accepted on the basis of a material certification that the product conforms to this specification.

730-14 THRU 730-18 (VACANT)

730-19 TEMPORARY WOODEN SIGN POSTS

SCOPE. This specification covers the material requirements for temporary wooden sign posts.

MATERIAL REQUIREMENTS. Wooden sign posts shall be untreated surface dried redwood, red cedar, cypress or black locust; or pressure treated spruce, pine, fir, oak, birch, maple or beech. Posts shall be pressure treated in accordance with 708-31 Wood Preservative - Water Borne.

All 4 x 6 inch posts shall have two 1 1/2 inch diameter breakaway holes drilled through the center of the post parallel to the sign face 4 inches and 18 inches above grade and filled with flexible caulk. All 6 x 8 inch posts shall have two 3 inch diameter breakaway holes drilled through the center of the post parallel to the sign face 4 inches and 18 inches above grade and filled with flexible caulk.

BASIS OF ACCEPTANCE. Upon request, the Contractor shall provide a material certification that the product conforms to this specification.

730-20 DELINEATOR, REFERENCE MARKER AND SNOWPLOWING MARKER POSTS

SCOPE. These specifications cover the material requirements for steel posts used to support delineators, reference markers, and snowplowing markers.

MATERIAL REQUIREMENTS.

Posts shall be fabricated of steel meeting the requirements of §715-01 Structural Steel or any of the following steel types:

ASTM A1

ASTM A36

ASTM A499 (Grade 60, Grade 70, Grade 80SP)

ASTM A500 (Grade B)

ASTM A570 (Grade 60)

ASTM A653 (Grade 55)

ASTM A1011

After fabrication (punching, drilling, etc.) all steel posts shall be galvanized, and all damage to the galvanized surfaces due to handling, shipment, erection, etc., shall be repaired, in accordance with the applicable requirements of §719-01 Galvanized Coatings and Repair Methods.

BASIS OF ACCEPTANCE. Posts will be accepted on the basis of a material certification that the product conforms to this specification.

730-21 FLEXIBLE DELINEATOR POSTS

SCOPE. This specification covers the material, fabrication, and performance requirements for flexible delineator posts.

MATERIALS REQUIREMENTS. Flexible delineator posts shall be supplied with reflective sheeting of a size and color as required by the contract documents. The color of the posts shall match the color of the reflective sheeting unless otherwise specified in the contract documents. Where double unit reflectors are specified, elongated reflective sheeting may be substituted as in accordance with the MUTCD.

Reflective sheeting shall be fabricated of a material conforming to the requirements of §730-05 Reflective Sheeting, Class B, Class C, or Class E. Sheeting shall be applied in accordance with the sheeting manufacturer's written instructions.

TESTING. Flexible delineator posts shall meet the requirements in the procedural directives of the Materials Bureau.

BASIS OF ACCEPTANCE. Application for approval of flexible delineator posts shall be submitted to the Materials Bureau. The procedural directives outlining detailed requirements and procedures for approval are available from the Materials Bureau. Upon approval the name of the flexible delineator post will be placed on an Approved List.

Project acceptance will be based on the manufacturer's name and type of flexible delineator post appearing on the Department's Approved List titled >Flexible Delineator Posts.=

730-22 STIFFENERS, OVERHEAD BRACKETS AND MISCELLANEOUS HARDWARE

SCOPE. These specifications cover the material requirements for stiffeners, overhead brackets and miscellaneous hardware used for signs.

MATERIAL REQUIREMENTS

Aluminum Components. Horizontal sign panel stiffeners (Z bars) and overhead panel brackets shall be fabricated of aluminum alloy 6061-T6.

Other miscellaneous hardware including vertical stiffeners, bolts, nuts, washers, screws, rivets, pull-type lockbolts and serrated or knob stem blind rivets shall be fabricated of the materials and in the manner shown on the plans or standard sheets and shall meet the requirements of 715-04, Wrought Aluminum.

Components designated as Alloy 2024-T4 shall be given a Type 205 coating in accordance with 719-02, Aluminum Anodic Coatings.

Certification, Sampling, Testing and Inspection of aluminum components shall be handled as noted in 715-04.

Steel Components. Steel bolts, nuts and washers referenced to this specification shall conform to the requirements of Table 730-22-1 unless otherwise specified.

Bolts, nuts and washers to be used in contact with aluminum shall be coated with cadmium or cadmium/tin combination.

All cadmium and cadmium/tin coatings shall be given a chromate treatment in or with an aqueous solution of salts, acids or both to produce a protective chromate coating. The chromate coating shall be distinctly colored iridescent yellow to bronze for cadmium. Cadmium/tin coatings, when given this iridescent chromate treatment, may remain silver colored. Usual chromic and nitric acid bright dips are not chromate treatments.

| TABLE 730-22-1 STEEL FASTENERS | | | | | | |
|---------------------------------------|---------------------------|--|--|-------------------------|---|------------------------|
| Bolt (ASTM F568) | Bolt Size (in) | Allowable Nuts¹ (ASTM A563M) | Bolt, Nuts & Washer Coating Systems² | Plain Washer | Prevailing Torque Hex Nuts And Hex Flange Nuts³ | Lock Washer |
| A307 | 1/4 to 1 1/2 | 5 - H1 | P or Z | < M12, use | CLASS 5,9 or | General |

| | | | | | | |
|--|--------------------------------|--|------------------|--------------------------------------|--------------------|---|
| | 1 3/4 to 4 | 5 - HH | P or Z | ANSI B18.22M, soft | 10 | Motors Standard Metric Helical Spring General Specification |
| A325 or A449 | 5/8 to 1 1/2 1 3/4 to 4 | 9 - H2 12 - H2 9 - HH 12 - HH | P Z P Z | ≥M12, use ASTM F436M IFI | CLASS 5,9 or 10 | |
| A354 Grade BD or A490 Type 1 or 3 | 1/4 to 1 1/2 1 3/4 to 4 | 10 - H1 12 - HH | P P or Z | 542 or ANSI B18.22M, hard only | CLASS 9 or 10 | |

NOTES:

- Class of nut (5,9,10 and 12):
H1 ANSI B18.2.4.1M hex nut, style 1
H2 ANSI B18.2.4.2M hex nut, style 2
HH ANSI B18.2.4.6M heavy hex nut
- P > 7/16": ASTM B695, class 50, type 1
P ≤ 7/16": ASTM B695, class 40, type 1, cadmium coating
ASTM B696, class 8, type 2
ASTM B766, class 12, type 2, cadmium/tin coating
ASTM B635, class 8, type 2
Z > 7/16": ASTM A153, class C
Z ≤ 7/16": ASTM A153, class D
- ANSI B18.16.1M

BASIS OF ACCEPTANCE. Acceptance will be based on the manufacturer's certification that its product conforms to these specifications.

730-23 FIBERGLASS REINFORCED PLASTIC SIGN PANELS

SCOPE. This specification covers the material requirements for fiberglass reinforced plastic for use as a sign panel substrate.

GENERAL. The fiberglass reinforced plastic sign panel shall be fiberglass reinforced thermoset polyester laminate. The panel shall be acrylic modified and UV stabilized for outdoor weatherability. The panel shall be stabilized so as not to release migrating constituents (i.e., solvents, monomers, etc.) over time, and shall contain no residual release agents on the surface of the laminate that will interfere with any subsequent bonding operations. The panel shall not contain visible cracks, pinholes, foreign inclusions, or surface wrinkles that would affect implied performance, alter the specific dimensions of the panel or otherwise affect its serviceability.

MATERIALS REQUIREMENTS

Physical Requirements. The fiberglass reinforced plastic sign panel materials shall conform to the physical requirements in Table 730-23-1:

| TABLE 730-23-1 PHYSICAL REQUIREMENTS FOR FRP SIGN PANELS | | | |
|--|---------------------|-------------|------|
| Property | ASTM Test Method | Requirement | |
| | | Min. | Max. |

| | | | |
|---------------------------|-------|------------------------|----|
| Tensile Strength | D638 | 10.0×10^3 psi | -- |
| Tensile Modulus | D638 | 1.2×10^6 psi | -- |
| Flexural Strength | D790 | 20.0×10^3 psi | -- |
| Flexural Modulus | D790 | 1.2×10^6 psi | -- |
| Compression Strength | D695 | 32.0×10^3 psi | -- |
| Compression Modulus | D695 | 1.4×10^6 psi | -- |
| Punch Shear | D732 | 13.0×10^3 psi | -- |
| Weatherability C Grade II | D3841 | 26 | 44 |
| Impact Resistance | D3841 | 60 ft | -- |

Panel Flatness Test. Panel flatness shall be determined by supporting a 30 x 30 inch panel at two opposite corners, the maximum deflection measured diagonally, parallel and perpendicular to the panel by lines drawn through the center of the panel, shall not exceed 1/2 inch. The panel shall then be supported in a like manner in an oven for 48 hours at 180°F. The maximum deflection shall again be measured as previously noted, and shall not exceed 1/2 inch. All measurements shall be made when the panels are at ambient temperature.

The fiberglass reinforced plastic panel shall have a maximum Coefficient of Thermal Expansion of 1.8×10^{-5} in/in/°F and maintain its strength and impact resistance qualities over a temperature range of -65°F to 212°F.

Application of Reflective Sheeting. The reflective sheeting shall be adhered to the fiberglass reinforced plastic panel in strict accordance with the recommendations of the manufacturer of the reflective sheeting.

BASIS OF ACCEPTANCE. Application for approval of fiberglass reinforced plastic sign panel by the producer shall be submitted to the Materials Bureau accompanied by a 80 square foot sample of the product. Upon approval by the Materials Bureau, the name of the product will be placed on the Department's Approved List entitled AFiberglass Reinforced Plastic Sign Panels 730-23.

730-24 TYPE A SIGN SUPPORTS

SCOPE. This specification covers the material and fabrication requirements for breakaway supports used for roadside signs.

MATERIAL, FABRICATION AND PERFORMANCE REQUIREMENTS. Post material, fabrication and performance requirements shall be in accordance with the standard sheets, the appropriate Materials Details and the procedural directives of the Materials Bureau.

BASIS OF ACCEPTANCE. Type A Sign Supports shown on the standard sheets shall be accepted based on the manufacturer's certification that its product conforms to these specifications and the appropriate standard sheets.

All other Type A Sign Supports will be accepted on the basis of their listing on the Department's Approved List of Type A Sign Supports. In addition, the manufacturer or supplier shall provide two copies of the approved Materials Details through the Contractor to the Engineer as part of the evidence of acceptability for the material at least ten days prior to the use of the product.

730-25 TYPE B SIGN POSTS

SCOPE. This specification covers the material requirements for Type B Sign Posts and Rustic Type B Sign Posts. These sign posts shall be equipped with breakaway bases and hinge assemblies per 730-26, Breakaway Bases and Hinge Assemblies, if installed at a location subject to vehicle impact.

MATERIALS AND FABRICATION REQUIREMENTS

Steel Sign Posts. Steel for sign posts and attachments to or components of sign posts shall be ASTM A36, A242, A572 Grade 50 and A588 and shall conform to 715-01 Structural Steel. Rustic Type B Sign Posts shall be ungalvanized weathering steel, ASTM A588 or A242, meeting the requirements of 715-01 Structural Steel.

Sign posts, except Rustic Type B Sign Posts, shall be galvanized after fabrication (punching, drilling, welding, cutting, etc.) in accordance with 719-01, Galvanized Coatings and Repair Methods. Damage to galvanized surfaces of steel posts due to handling, shipment, erection, etc. shall be repaired as described in Repair of 719-01, when directed by the Engineer.

Sign posts with breakaway bases shall be of weldable quality, and all welding shall be in accordance with the provisions of the section on 'Fabrication' of the New York State Steel Construction Manual.

FABRICATION. Sign posts shall be fabricated as indicated on the standard sheets. Breakaway bases shall conform to the requirements of 730-26, Breakaway Bases and Hinge Assemblies.

BASIS OF ACCEPTANCE. Acceptance shall be based on the manufacturer's certification that the product conforms to these specifications.

730-26 BREAKAWAY BASES AND HINGE ASSEMBLIES

SCOPE. This specification covers the material and fabrication requirements for bi-directional and omni-directional breakaway bases and hinge assemblies for use on Type B Sign Posts and for use on Rustic Type B Sign Posts.

Bi-Directional Breakaway Bases and Hinge Assemblies are intended for use when the expected impact angle is within 30 degrees of the axis of the base from the front and rear.

Omni-Directional Breakaway Bases and Hinge Assemblies are intended for use whenever the expected impact angle may be greater than 30 degrees, measured as described above.

MATERIAL AND FABRICATION REQUIREMENTS. Breakaway bases and hinge assemblies shown on standard sheets shall satisfy the following requirements:

Steel for breakaway bases and hinge assemblies shall be A-36, A242, A572 Grade 50, A588 and shall meet the requirements of 715-01, Structural Steel. Steel shall be of weldable quality. Fasteners shall be of the size and shape shown on the Standard Sheets and meet the requirements of 730-22, Stiffeners, Overhead Brackets and Miscellaneous Hardware. Breakaway bases and hinge assemblies shall be galvanized in accordance with 719-01, Galvanized Coatings and Repair Methods, after the base is welded to the post. Welding shall be in accordance with the provisions of the section on 'Fabrication' of the 'New York State Steel Construction Manual.' Fabrication details shall be in accordance with the standard sheets.

Breakaway bases and hinge assemblies for use in conjunction with rustic sign posts shall meet the above requirements with the following exceptions:

- The upper slip base plate and attached post shall be ungalvanized weathering steel, ASTM A588 or A242, meeting the requirements of 715-01, Structural Steel. The lower slip base plate, and the attached stub portion of the post, shall be galvanized steel. The remainder of the slip base shall be as shown on the contract drawings.

- When used on one-way, divided roadways, the back flange hinge plate shall be ungalvanized A588 or A242 steel installed as shown on the contract drawings. When used on two-way, undivided roadways, the back flange hinge plate shall meet the requirements, below, of the front flange hinge plate.
- The front flange hinge plate shall be galvanized steel, except that an additional galvanized steel flat washer meeting the requirements of ASTM F436 shall be installed on all four bolts between the post and the hinge plate to assure proper slippage.

All exposed galvanized surfaces, except in the vicinity of the slots in the hinge plates, shall be painted in accordance with §657 *Painting Galvanized and Aluminum Surfaces*.

BASIS OF ACCEPTANCE. Breakaway bases and hinge assemblies fabricated as shown on the standard sheets shall be accepted based on the manufacturer's certification that the complete assembly conforms to these specifications.

730-27 PERMANENT VARIABLE MESSAGE SIGNS

SCOPE. This specification gives minimum material, fabrication, fatigue and strength requirements of variable message signs for permanent installation. Other requirements are in the Contract Documents.

Within this specification, "overhead" shall mean to be mounted over the traveled way, or what the plans indicate will become the traveled way.

MATERIAL REQUIREMENTS

Housing. The enclosure housing shall be constructed of aluminum alloy 3003-H14, 6061-T6, 5154-H38 or as specified on approved shop drawings. The minimum thickness shall be 1/8 inch. Seams shall be continuously welded by an inert gas process only in the shop.

The housing shall be completely sealed to prevent the entry of water, insects, dust, dirt and corrosion. Neoprene gaskets shall be utilized as necessary.

Readily-available, changeable filtration devices shall be provided at drain holes and at all points where forced air enters the enclosure.

All hinged access panels and windows shall be equipped with hold-open devices which shall not release accidentally or by the action of wind. The hold-open devices shall not interfere with the operation of the display, nor with the repair or replacement of user serviceable components.

Stiffeners, Hardware and Mounting Brackets. Hardware, framing members and mounting brackets shall meet the requirements of 730-22, unless indicated otherwise on the manufacturer's shop drawings approved by the Engineer.

Framing structural members shall be made of aluminum alloy 6061-T6 or an approved equivalent. All hardware shall be corrosion-resistant steel or protected from corrosion by suitable plating. Fasteners for securing access panels shall be captive.

MANUFACTURING

General. Fabrication shall be such that performance will not be impaired after the equipment has been subjected to shock and vibration caused by normal installation, transportation and maintenance handling. Particular attention shall be given to neatness and thoroughness of soldering, wiring, welding, plating, riveting, finishes and machine operations. All parts shall be free from burrs and sharp edges or any other defect that could make the part or equipment unsatisfactory for the operation or function intended in this specification.

Modules shall be designed such that major portions may easily be replaced. Modules of unlike functions shall be mechanically keyed to prevent insertion into the wrong socket or connector. All modules and assemblies shall be clearly identified with name, model number, serial number and any other pertinent information required to facilitate equipment maintenance. They shall be readily accessible for inspection and maintenance, using simple hand-held tools and standard meters.

Housing. The sign enclosure including doors and access panels shall be designed and constructed so as to present a clean, neat appearance; be smooth with exterior corners rounded; be weatherproof and vandal-resistant; and be free of burrs, blemishes and unspecified holes.

Drainage holes shall be drilled near each corner of the base of the enclosure.

The enclosure shall have internal lighting sufficient for all maintenance activity requirements of the VMS and 120 volt power receptacles every 10 feet mounted on the rear interior panels.

If the variable message sign is designated as "walk-in," then its access door shall be a minimum of 24 inches wide x 60 inches high.

Environmental

A. Temperature. Internal temperature shall be continuously monitored whenever electric power is applied to the sign. The internal temperature of the enclosure shall be reported to the local and central controller upon request. Ventilation shall be automatically turned on and off at internal temperatures specified in the Proposal. Exhaust and intake ports shall be protected by filter screens against moisture, dust and insect intrusion. The ventilation system shall be sufficient to circulate three times the volume of air inside the enclosure per minute. Multiple fans or blowers shall be used to provide the specified venting and shall be located within the enclosure to minimize heat stratification.

B. Adverse Conditions. The equipment shall meet all of its specified functions during and after subjection to any combination of the following conditions:

1. **Ambient Temperature.** Range of -22°F to +145°F.
2. **Temperature Shock.** 60°F per hour, during which the relative humidity shall not exceed 95%.
3. **Relative Humidity Range.** 0 to 95% over the temperature range of 40°F to 110°F.
4. **Moisture Condensation.** On all surfaces.

C. Ambient Light. The variable message sign shall be equipped with light sensors so that the display shall be able to automatically adapt its level of light output to maintain readability under varying ambient light conditions. There shall be a minimum of eight (8) levels of dimming, linearly spaced from nighttime to daylight brightness. The sign's automatic dimming control shall be overridable by central control. The dimming circuitry shall automatically compensate for variations in the AC line voltage to maintain the light output constant for the selected brightness level. The levels of lighting shall produce luminance measured on the optic axis, as follows:

1. **Daylight.** A minimum of 14 candela per pixule for typical daylight environment.
2. **Nighttime.** Between 1.5 and 2 candela per pixule for nighttime environment.

Electrical Protection. The equipment shall contain readily-accessible, normally resettable or replaceable circuit protection devices (such as circuit breakers or fuses) for equipment and power source protection.

Electronic Components. All components shall be UL listed. All printed circuit boards shall be FR4 or G10 fiberglass epoxy material, with 2 oz. copper, double-sided with plated through-holes.

All etched connector fingers are to be plated with a minimum thickness of 100 micro-inches of gold over nickel.

Board connectors that are not an integral part of the printed circuit are to be plated with a minimum thickness of 15 micro-inches of gold over nickel.

Sign Face. In order to increase contrast, the pixules shall be arranged on a black, non-glossy background. All electronic components visible from outside the sign shall be of black color or coated with black, non-glossy paint.

The front of the sign shall be enclosed by a protective, weathertight face, 1/4 inch thick.

Variable spacing between letters shall approximate the recommended spacing for 18 inch Series E sign text found in the Federal Highway Administration Standard Alphabets for Highway Signs.

DESIGN CRITERIA. Design loads used in the design of the connection and mounting elements of the sign enclosure shall be as specified in the most current *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*.

SUBMITTALS. When details of the connection of the Permanent Variable Message Sign to the sign structure are not included in the Contract Documents, the Contractor shall submit shop drawings to the DCES for approval, detailing how to mount and connect the variable message sign enclosure to the structure. Shop Drawings shall be submitted in accordance with the SCM. Shop Drawings may be submitted electronically to dc.es.metals@dot.ny.gov. If the shop drawings are approved by the Department, the contractor will be notified by electronic mail.

DELIVERY AND INSTALLATION

The contractor shall deliver, store, handle, and install all materials and equipment in such a manner as not to degrade quality, serviceability or appearance. Material to be stored shall be stored in a clean and dry location free from construction dust, precipitation, and condensing moisture. Any part of the equipment damaged during transportation, handling, or installation shall be repaired, or if determined by the Engineer as unfit for use in the finished work, shall be removed from the site and replaced by the Contractor at no additional cost.

All materials shall be delivered and stored in the manufacturer's original unopened protective packages and protected against soiling, physical damage, or wetting, before and during installation. Unloading and unpacking of all materials shall be done in a manner to prevent misalignment or damage.

The installation shall be performed by factory certified personnel. Installation shall be complete in all respects, including all framing and all related fastenings and anchors required for a complete installation. Equipment shall be placed in accordance with the general arrangement as shown on the Drawings. The general arrangement may be modified only as required to suit specific equipment. Modifications shall not affect the design of components. Layout dimensions as shown on the Drawings may be modified to improve operating efficiency.

MARKING. The contract number, pay-item number, and month and year of installation shall be marked using permanent ink, paint, or stamping into the wall. Characters shall be 1 to 1 3/4 inches high, horizontal when the variable message sign is in its final position, and be located in the following locations:

- The end panel of the vms, so as to be visible from the shoulder closest to the variable message sign.
- On the inside of a "walk-in" variable message sign, near the middle of the panel opposite the door.

Also, the manufacturer's name, product name, model number, serial number, and city and state or province of manufacture shall be permanently marked on the outside and an easily accessible location inside the variable message sign.

These markings shall not be visible when viewing the front of the variable message sign straight-on.

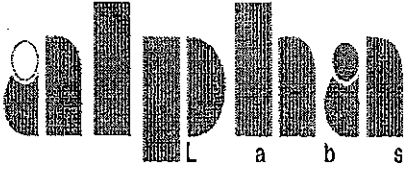
BASIS OF ACCEPTANCE. Permanent Variable Message Signs will be accepted on the following basis:

- Submission and approval of shop drawings for each different variable message sign supplied.
- Submission and approval of shop drawings, including mounting details of Permanent Variable Message Sign to sign structure.
- Manufacturer's certificate of compliance to these specifications including compliance to the most current *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*.
- If required by the contract documents, submission of mill certifications for structural elements.
- Passing all performance tests as specified in the contract documents.

Final inspection and acceptance of equipment shall be made after installation at the locations specified in the contract documents.

Alpha Lab Paint Chip Test Results

to: 845-353-6509



14-26 28th Avenue

Long Island City, NY 11102

Tel.: (718) 482-7525 Fax: (718) 482-7524

www.alphalabsllc.com

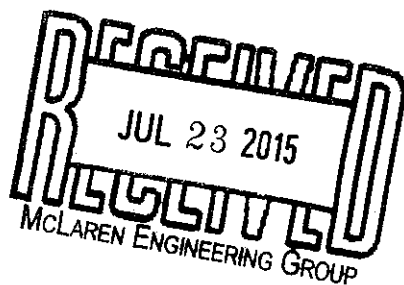
Eileen!

Sorry for not receiving the reports.

Here they come by fax.
Hopefully.

Regards,

Brent





14-26 28th Avenue

Long Island City, NY 11102

Tel.: (718) 482-7525 Fax: (718) 482-7524

www.alphalabsllc.com

ANALYSIS REPORT FOR LEAD IN PAINT FILM

Client: McLaren Engineering Group, 100 Snake Hill Road, West Nyack, NY 10994

Building Address: BPCA - Tribeca Pedestrian Bridge

Project #: 140950.04

Date sampled: 07/06/15

| Client Sample # | Location | Description | Detection Limit (% Pb w/w) | Result (% Pb w/w) | Lab Sample # |
|-----------------|----------|---|----------------------------|-------------------|-----------------|
| 1 | - | Paint sample - beige with brown specs, small rust spots on reverse side | 0.02% | <0.02% | LP 15-07-076-01 |
| 2 | - | Paint sample - light gray on one side, dark gray on reverse side | 0.02% | <0.02% | LP 15-07-076-02 |
| 3 | - | Paint sample - light gray on one side, dark gray on reverse side | 0.03% | <0.03% | LP 15-07-076-03 |
| 4 | - | Paint sample - layered rust color | 0.02% | <0.02% | LP 15-07-076-04 |

Analysis by: Flame AAS
Method: ASTM D3335- 85A

Date Received: 07/16/2015
Date of Analysis: 07/16/2015
Date of Report: 07/17/2015

Analyst: M. Pawlowska
M. Pawlowska

QA/QC Manager: B. Stojanowska-Luft
B. Stojanowska-Luft

Collection procedures, protocols and sample locations are based on information provided by the client submitting the samples; and as such, ALPHA Labs LLC disclaims any knowledge of and liability for the accuracy and completeness of this information.

NYS-DOH ELAP #: 11833

Page 1 of 1

CHAIN OF CUSTODY

1219044



100 Snake Hill Road
West Nyack, NY 10994
Phone (845) 353-6400
Fax (845) 353-6509
EOE M/F D/V

0003/0005

Date of Order: 7/15/15
Vendor Name: Alpha Labs
Vendor Address: 14-26 28th Avenue
Long Island City, NY 11102

Vendor Phone: 718-482-7525
Vendor Fax:
Vendor Web Site:

Ordered by: Ben Hamm

Email: bhamm@mgmclaren.com

Ship Via:

BILLING TERMS:

Bill Us ☒C.O.D. ☐Prepaid: ☐ (Check or Credit Card*)

ORDERED VIA:

Telephone ☐Mail Order ☒Web Site ☐

Shipping Address if different than above

JOB REFERENCE:

Project Name: BPCA - Tribeca Pedestrian Bridge

Project No. 140950.04

| Sample | Date Collected | Description | Analysis Requested | Return |
|--------|----------------|---|--------------------|--------|
| 1 | 7/6/15 | Paint sample - beige with brown specs, small rust spots on reverse side | Lead | Yes |
| 2 | 7/6/15 | Paint sample - light gray on one side, dark gray on reverse side | Lead | Yes |
| 3 | 7/6/15 | Paint sample - light gray on one side, dark gray on reverse side | Lead | Yes |
| 4 | 7/6/15 | Paint sample - layered rust color | Lead | Yes |
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RCVD: 7/16/15 12:40 PM
R. GONZALEZ

07/23/2015 16:10 FAX



14-26 28th Avenue

Long Island City, NY 11102

Tel.: (718) 482-7525 Fax: (718) 482-7524

www.alphalabsllc.com

BULK SAMPLE ANALYSIS REPORT

CLIENT: McLaren Engineering Group, 100 Snake Hill Road, West Nyack, NY 10994**BUILDING ADDRESS:** BPCA - Tribeca Pedestrian Bridge**Project #:** 140950.04

| Client Sample ID# Lab Sample ID# | Sample Description | Sample Location | Appearance | GRAVIMETRIC PREPARATION | | | PLM | | ASBESTOS % & Type | TEM ASBESTOS % & Type |
|-------------------------------------|--|--------------------|------------------------------------|---------------------------------|---|---|--|---|----------------------|-----------------------------|
| | | | | % Ashed Organic Component | % Acid Soluble Inorganic Component | % Acid Insoluble Inorganic Component | % Estimated Non- Asbestos Fibrous Material | % Non- Fibrous Matrix Material | | |
| 1 15-07-058-1 | Paint sample - beige with brown specs, small rust spots on reverse side | NA | Beige Homogeneous NOB | 36.2 | 10.5 | 53.3 | 0% | 100% | NAD Inconclusive | NAD |
| 2 15-07-058-2 | Paint sample - light gray on one side, dark gray on reverse side | NA | White/ gray Homogeneous NOB | 35.1 | 15.1 | 49.8 | 0% | 100% | NAD Inconclusive | NAD |
| 3 15-07-058-3 | Paint sample - light gray on one side, dark gray on reverse side | NA | White/ gray Homogeneous NOB | 36.9 | 13.4 | 49.6 | 0% | 100% | NAD Inconclusive | NAD |
| 5 15-07-058-4 | Paint sample - layered rust color | NA | Brown/ beige Homogeneous NOB | 35.7 | 9.4 | 54.9 | 0% | 100% | NAD Inconclusive | NAD |

Date Received: 7/16/15

Date of PLM Analysis: 7/17/15

Date of TEM Analysis: 7/17/15

Date of Report: 7/17/15

PLM Analyst: B. Stojanowska-Luft

TEM Analyst: L. Tchorzewski

Analyst:

B. Stojanowska-Luft

QC Review / Date:

B. Stojanowska-Luft, QA-QC Manager

NAD = No Asbestos Detected; NA/PS = Not Analyzed / Positive Stop; Trace = < 1%; CH = Chrysotile, AMO = Amosite, CRO = Crocidolite, ANTH = Anthophyllite, TRE = Tremolite, ACT = Actinolite, FBGL = Fiberglass, CELL = Cellulose. Polarized Light Microscopy (PLM) analysis of samples is performed by Method EPA 600/M4-82-020 and ELAP PLM Analysis Protocol 198.1 (friable sample, which includes the identification and quantitation of vermiculite) and protocol 198.6 (NOB samples), Transmission Electron Microscopy (TEM) analysis of samples is performed by Method ELAP TEM Analysis Protocol 198.4. Analytical equipments: Stereobinocular microscopes: Professional Bin (PM #1), Carlisan (Ser# 011418); Polarized Light Microscopes: Olympus BH-2 (Ser #: 214335), Olympus BH-2 (Ser #: 236532). PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing. Samples will be stored for sixty (60) days and then returned to the client upon request. The results relate only to the items calibrated or tested. This report may not be reproduced, except in full, without the written approval of Alpha Labs LLC. The report must not be used by the client to claim endorsement by NVLAP or any agency of the US Government. The liability of Alpha Labs LLC with respect to the services charged shall in no event exceed the amount of the invoice. (April 1, 2013)

NYS-DOH ELAP # 11833

NVLAP Lab Code: 200691-0

CHAIN OF CUSTODY

1219044



100 Snake Hill Road
West Nyack, NY 10994
Phone (845) 353-6400
Fax (845) 353-6509
EOE M/F D/V

15-07-058

0005/0005

Date of Order: 7/15/15
Vendor Name: Alpha Labs
Vendor Address: 14-26 28th Avenue
Long Island City, NY 11102

Ordered by: Ben Hamm

Email: bhamm@mgmclaren.com

Vendor Phone: 718-482-7525
Vendor Fax:
Vendor Web Site:

Ship Via:

BILLING TERMS: Bill Us ☒ C.O.D ☐ Prepaid: ☐ (Check or Credit Card*)

ORDERED VIA: Telephone ☐ Mail Order ☒ Web Site ☐

Shipping Address: if different than above

JOB REFERENCE: Project Name: BPCA - Tribeca Pedestrian Bridge

Project No. 140950.04

| Sample | Date Collected | Description | Analysis Requested | Return |
|--------|----------------|---|--------------------|--------|
| 1 | 7/6/15 | Paint sample - beige with brown specs, small rust spots on reverse side | Asbestos | Yes |
| 2 | 7/6/15 | Paint sample - light gray on one side, dark gray on reverse side | Asbestos | Yes |
| 3 | 7/6/15 | Paint sample - light gray on one side, dark gray on reverse side | Asbestos | Yes |
| 4 | 7/6/15 | Paint sample - layered rust color | Asbestos | Yes |
| | | | | |
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RCRD: 7/16/15 12:40 PM

R. Gonn

07/23/2015 16:10 FAX

EXHIBIT G
Schedule of Values

**BATTERY PARK CITY AUTHORITY
TRIBECA BRIDGE PAINTING AND REPAIRS**

Itemized Schedule of Values

The work in this contract is to include, but not limited to, the furnishing and installation of the following general list of lump sum and unit items.

| Item | Description | Unit | Unit Price | Quantity | Cost |
|---|---|------|------------|----------|------|
| PAINTING OF ENTIRE BRIDGE, ELEVATORS TOWERS AND ACCESS STAIRS EXCLUDING BRIDGE UNDERSIDE | | | | | |
| 1 | Mobilization | LS | | 1 | \$ - |
| 2 | General Conditions | LS | | 1 | \$ - |
| 3 | Performance Bond | LS | | 1 | \$ - |
| 4 | Lead-Exposure Control Plan | LS | | 1 | \$ - |
| 5 | Medical Testing/Exposure Monitoring | LS | | 1 | \$ - |
| 6 | Barrier and Work Enclosure (Class B Containment), Including Removal | LS | | 1 | \$ - |
| 7 | Decontamination Facilities | CW | | 8 | \$ - |
| 8 | Treatment and Disposal of Paint Removal Waste | LS | | 1 | \$ - |
| 9 | Furnish and Install 8' High Temporary Chain Link Fence and Gate | LF | | 200 | \$ - |
| 10 | Basic Work Zone Traffic Control (Including Permits) | DAY | | 40 | \$ - |
| 11 | Type III Construction Barricade Rental | DAY | | 40 | \$ - |
| 12 | Surface Preparation to SP-10, Applying Primary, Intermediate & Final Coat (See Drawings for Square Footage) | LS | | 1 | \$ - |
| 13 | Window Cleaning | EA | | 352 | \$ - |
| 14 | Waterproofing/Caulking | LS | | 1 | \$ - |
| | | | | | |
| | | | | | |
| PAINTING OF BRIDGE UNDERSIDE | | | | | |
| 1 | Class B Containment for Paint Removal | LS | | 1 | \$ - |
| 2 | Treatment and Disposal of Paint Removal Waste | LS | | 1 | \$ - |
| 3 | Trailer with Extending and Collapsible Side Walls | LS | | 1 | \$ - |
| 4 | Cherry Picker, Flagger, Barrels and Cones, etc. | LS | | 1 | \$ - |
| 5 | Basic Work Zone Traffic Control (Including Permits) | DAY | | 15 | \$ - |
| 6 | Type III Construction Barricade Rental | DAY | | 15 | \$ - |
| 7 | Total Overcoat (1 Coat Paint) | SF | | 6,040 | \$ - |
| | | | | | |
| BIRD BARRIERS | | | | | |
| 1 | Furnish and Install Bird Barriers | LS | | 1 | \$ - |
| | | | | | |
| | TOTAL | | | | \$ - |
| | | | | | |
| | GRAND TOTAL | | | | \$ - |
| | | | | | |

EXHIBIT H

List of BPCA Members and Employees (attached)

LIST OF BOARD MEMBERS

Dennis Mehiel

Donald Coppocia

Frank Branchini

Martha Gallo

Lester Petracca

Hector Batista

Employee

Curtis Afzal
Elsa Alvarez
Dana Anders
Anthony Andriano
Stephen Arciold
Kathleen Bailey
Marie Baptiste
Freddy Belliard
Scott Birdseye
Nidia Blake-Reeder
Granderson Brown
Lauren Brugess
Nancy Buivid
Anthony Buquicchio
Monica Centeno
Betty Chin
Adam Choper
Carlton Chotalal
Deshay Crabb
Gwendolyn Dawson
Henri delaVega
Gilbert Depadua
Paul Diaz-Larui
Tonasia Dopson
Abigail Ehrlich
Maria Ellison
Richard Faraino
Anitra Fauntelroy
Eric T. Fleisher
Robin Forst
Joseph Ganci
Julissa Garcia
Luis Garcia
Abigail Goldenberg
Lenron Goode
Neresa Gordon
Ned Greenberg
Patrick Greene
Evelyn Gregg
Kelly Grogan
Robert Hansen

Nicole Heater
Sankar Heerah
Sonia Henry
Hector Herrera
Craig Hudon
Shari Hyman
Kendall Jinwright
Amy Jogie
Benjamin Jones
Kadia Kane
Roland Kemp
Susie Kim
AnaMariah Knox
Karl Koenig
Betzayda Laboy
Leandro Lafuente
Michael LaMancusa
Della Lee
Triny Lima
Rene Lopcy
Luis Lopez
Robert Maggi
Evelin Maisonet
Evonne Marche
Philip Mason
Kevin McCabe
Brenda McIntyre
Princess McNeill
Shinay McNeill
Vanessa Mesine
Ronnie Mohammed
Bertha Narcisse
Robert Nesmith
Siu NG
Yoshihiro Nishida
Kevin O'Toole
Hector Oyola
Willem Paillant
Gladys Pearlman
Dahlia Pena
Churman Persaud
Anthony Peterson
Bruno Pomponio

Katherine Powell
Sandra Power
Alix Pustilnik
Robert Quon
Jason Rachnowitz
Madelin Ramirez
Manuel Rivera
Anthony Robinson
Andrea Rodriguez
Nelson Rogers
Jose Rosada
Holly Ross
Carlos Santiago
Jean Schwartz
Lindsey Senn
Robert Serpico
Rekha Sewraj-Kumar
Sean Simon
Kemnarine Singh
Seema Singh
Timothy Skipper
Sarah Smedley
Linda Soriero
Nicole Stallworth-Roper
Kareem Starks
Jerome Sturiano
John Tam
Alexis Torres
Ryan Torres
Douglas VanHorn
Noe Velasquez
Evangelio Villalobos
Sharon Wade
David Wallace
Peter Wheelwright
Eric White
Angela Whitehead
Dwight Williams
Kenneth Windman
Al Wright
Jouli Yohannes
Julian Zapata
Bingxin Zheng

