NEW YORK CITY DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

P.I.N. 84108SIBR330

Contract No. HBR1217

ENGINEERING REQUIREMENTS

DESIGN/BUILD
REHABILITATION OF RAMP STRUCTURES AT THE ST. GEORGE, STATEN ISLAND FERRY TERMINAL

Together With All Work Incidental Thereto
EXHIBIT B
TECHNICAL SPECIFICATIONS
TECHNICAL SPECIFICATIONS

1. **APPLICABLE CODES AND STANDARDS**

The Company’s Engineer shall obtain, and become familiar with, all applicable Departmental Design Directives, Standard Details, Administrative Procedural Bulletins, Engineering Bulletins, Engineering Instructions and guidelines for the prosecution of the work/services under the various elements of the project. These shall include, but not be limited to, the latest editions including all amendments, of the following New York State Department of Transportation (NYSDOT) and New York City Department of Transportation (NYCDOT) documents, and American Association of State Highway and Transportation Officials (AASHTO) and Federal Highway Administration (FHWA) manuals:

- NYCDOT Procedures for Bridge Reconstruction Projects (revised 2/95) including:
  - Appendix A: BRPR Format and Requirements
  - Appendix B: Substandard Features Checklist
  - Appendix C: Presentation of Ratings
  - Appendix D: In-Depth Inspection Form and Bridge Inspection & Condition Report
  - Appendix E: Preliminary Plan Review Checklist
  - Appendix F: Field Survey Requirements
- NYCDOT Specifications for the preparation of Record Drawings, Indexes and Microfilms, September 1997.
- NYCDOT Street Lighting Standards
- NYC Uniform Land Use Review Procedure
- NYC Specifications for Title Examinations and Reports on Street/Railroad Intersections
- NYC Specifications for Title Examinations and Reports on Privately-Owned Tax Lots
- NYCDEP Water Supply and Sewer Standards
- City of New York Electrical Code
- NFPA National Electrical Code
- National Fire Protection Associations Electric Code, 1993 with all provisions in effect as of the date of Notice to proceed.
- NYSDOT Engineering Bulletins and Engineering Instructions issued as of the date of Price Proposal Submission
- NYSDOT Highway Design Manual with revisions in effect as of the date of Price Proposal Submission
- NYSDOT Standard Specifications for Highway Bridges with all provisions in effect as of the date of Price Proposal Submission
- NYSDOT Standard Specifications, Construction and Materials, May 4, 2006, with current additions and modifications in effect as of the date of Price Proposal Submission
- NYSDOT Steel Construction Manual, November 1981, including Addendum 1, April 1984, with current additions in effect as of the date of Price Proposal Submission
- NYSDOT Geometric Design Policy for Bridges
- NYSDOT Manual of Uniform Traffic Control Devices
- NYSDOT Uniform Code of Bridge Inspection
- NYSDOT Comprehensive Pavement Design Manual, June 2000, with revisions up to the date of Price Proposal Submission
CONSTRUCTION SPECIFICATIONS

2.1. Design Survey:
A topographical survey was performed for the North Ramp (BIN 2269760) and adjacent parking lot to the north as well as Ramp A (BIN 2270180) as part of the preliminary engineering effort for this project. These survey plans are included in the Engineering Support Data provided in Exhibit A. The Company shall update the survey data/plans, as required, prior to reconstructing the North Ramp (BIN 2269760) on a new alignment and Ramp A (BIN 2270180) on its existing alignment. NYCDOT is not responsible for any errors in the existing survey data/plans.

For rehabilitated structures the Company will need to perform a field survey to establish existing conditions and controls for design and construction. The survey shall be done in conformance with the guidelines established in the NYSDOT Highway Design Manual.

Additionally the Company shall conduct a survey of all columns, beams, utilities, etc over and adjacent to SIRTOA tracks for the purposes of establishing clearance restrictions to the tracks.
2.2. **Maintenance and Protection of Traffic:**
The Company shall prepare and submit Maintenance and Protection of Traffic (MPT) to NYCDOT Office of Construction Mitigation and Coordination (OCMC) for review and approval. MPT Plans shall also be submitted for approval to NYCDOT Traffic Division, Attn: Gerard Soffian; NYCDOT Highway Design and Construction, Attn: Sam Barkho and to NYCDOT Passenger Transport Division, Attn: Capt. James DeSimone. The Company’s proposed method of MPT and construction staging must also be reviewed and approved by New York City Transit Surface Operations prior to commencing any work on the bus ramps. The Company shall also be required to make presentation to the Community Board 1, as necessary.

Specific MPT criteria established for this project is contained in Exhibit F – Maintenance and Protection of Traffic Stipulations.

2.3. **Public Utility Work:**
All utility facilities under and over the bridges shall be temporarily protected, supported, relocated and/or upgraded during the rehabilitation/reconstruction of the project bridges as required based on the nature of the proposed work. The Company will contact all public utility agencies for their specific requirements, if any, on this bridge rehabilitation project. Some utility agencies may provide design drawings for re-construction. Section 11 of Exhibit A contains plans showing existing bridge mounted utilities as well as plates received from contacted agencies. This information must be verified by contacting the appropriate public agencies/departments which are:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Address</th>
<th>Contact Person</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Department of New York</td>
<td>9 MetroTech Ctr, 7th Flr Brooklyn, New York 11201</td>
<td>Mr. John Coloe Director of Communications</td>
<td>(718) 999-2000</td>
</tr>
<tr>
<td>New York Police Department</td>
<td>1 Police Plaza, Rm 900-E New York, New York 10038</td>
<td>Mr. Howard Baker Director of Communications</td>
<td>(646) 610-5000</td>
</tr>
<tr>
<td>NYCDOT Bureau of Signals &amp; Street Lighting</td>
<td>34-02 Queens Blvd 2nd Floor L.I.C., NY 11101</td>
<td>Ms. Marguerite Riskalla</td>
<td>(718) 786-4715</td>
</tr>
<tr>
<td>NYCDEP – Bureau of Water &amp; Sewer Operations</td>
<td>59-17 Junction Blvd. 3rd Floor Low Rise Flushing, NY 11373</td>
<td>Mr. Vincent Soriano</td>
<td>(718) 595-5755</td>
</tr>
<tr>
<td>NYCT – Outside Projects (Signals)</td>
<td>2 Broadway, 7th Floor New York, NY 10004</td>
<td>Mr. Rajen Udeshi</td>
<td>(646) 252-3673</td>
</tr>
</tbody>
</table>

2.4. **Utility Services**
The ferry terminal is owned and operated by the City of New York. Any private utility services such as telephone, gas and electric, etc. on the site are there for the use of New York City. As such the cost of all work related to temporarily protecting, supporting, relocating and/or repairing these utilities on the terminal site will be the responsibility of the owner, New York City and is not subject to the requirements of Section U in Book 1 of this RFP. Therefore the cost of such utility work is to be included in the Company’s Price Proposal.
However, if the Company’s work is performed in such a manner as to impact private utility services on Richmond Terrace that work is subject to the requirements of Section U in which the Company is required to enter into a separate contract with the Utility Company.

In any event the Company must contact the private utility agencies to confirm location of utilities shown in utility plans/plates provided in Section 11 of Exhibit A and to notify them of the proposed work. Private utility contact information is provided below.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Address</th>
<th>Contact Person</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verizon</td>
<td>1 Cross Island Plaza 227A</td>
<td>Mr. John Curley</td>
<td>(718) 977-8165</td>
</tr>
<tr>
<td></td>
<td>Rosedale, NY 11422</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Con Edison, Staten Island</td>
<td>1 Davis Ave Staten Island, NY 10310</td>
<td>Mr. Marcello DeMayo</td>
<td>(718) 390-6289</td>
</tr>
<tr>
<td>Keyspan (Gas – Brooklyn, Queens and S.I.)</td>
<td>287 Maspeth Avenue Brooklyn, NY 11211</td>
<td>Mr. Neville Jacobs</td>
<td>(718) 963-5612</td>
</tr>
<tr>
<td>Staten Island Cable</td>
<td>100 Cable Way Staten Island, NY 10303</td>
<td>Mr. Neal Sweeney Mr. Michael Schwab</td>
<td>(718) 442-5022 (718) 390-7045</td>
</tr>
</tbody>
</table>

2.5. **Temporary Trailers for SIRTOA and NYCT-Surface Operations Personnel:**

The Company shall provide temporary trailers for SIRTOA and NYCT-Surface Operations personnel during construction operations which occur in the vicinity of existing work quarters. In the case of SIRTOA this applies to the dispatcher’s office located under Ramp D and for NYCT-Surface Operations the break room trailer on Bus Station North (in the Bus Ramp A lane). The Company shall contact SIRTOA and NYCT-Surface Operations to coordinate this work and determine a suitable location to site these temporary trailers. For price proposal purposes, Proposers should assume they will furnish one 12’ x 46’ mobile trailer for SIRTOA’s use and one 12’ x 46’ mobile trailer for MTA-Surface Operations’ use. Each trailer shall be equipped with electrical lighting (minimum illumination level of 100 ft-candles at desk height level), heating and cooling units capable of maintaining ambient air temperature between (70 to 75° F) and electrical wiring and outlets throughout the trailer.

2.6. **Company Trailers / Engineer’s Office**

The Company will be permitted to use space under Bus Station South (south of SIRTOA’s ROW) to site their construction trailers as well as the Engineer’s Office. Specific location is to be coordinated with NYCDOT – Passenger Transport Division.

Storage containers and equipment may be stored adjacent to the construction trailers. Other areas may also be available in the North Municipal Lot. During the execution of the contract, the Company shall arrange to meet with the entities having jurisdiction over the additional areas that may be available to work out the details of such areas, which include size, location, access, etc. However, no areas other than those specified in this RFP, shall be used without written authorization from the entities having jurisdiction over them.
2.7. **Design Drawings:**
The Company shall prepare and submit for review and approval design drawings as outlined in the Agreement. Construction work performed for any component prior to final plan approval of that component entitles NYCDOT to issue a stop work order. For other requirements for the preparation of Engineering Drawings and Microfilming, refer to the current applicable standards.

2.8. **Miscellaneous Flag Repairs:**
Perform flag repairs as needed if and where directed by NYCDOT.

3. **DESIGN/CONSTRUCTION COORDINATION – AGENCY CONTACTS**

3.1. **MTA – New York City Transit – Surface Operations**
The Company shall contact MTA- New York City Transit (NYCT) for all required review and approvals. In addition, the Company’s design and construction methodology must follow all MPT requirements outlined in Exhibit F. The contact persons for MTA - NYCT Surface Operations are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Palmer Reale</td>
<td>General Superintendent</td>
</tr>
<tr>
<td></td>
<td>Road Operations</td>
</tr>
<tr>
<td></td>
<td>Staten Island Division / Dept. of Buses</td>
</tr>
<tr>
<td></td>
<td>40 Yukon Avenue</td>
</tr>
<tr>
<td></td>
<td>Staten Island, NY 10314</td>
</tr>
<tr>
<td></td>
<td>(718) 494-5609</td>
</tr>
<tr>
<td>Mr. Karl Stricker</td>
<td>General Superintendent</td>
</tr>
<tr>
<td></td>
<td>Operations Analysis – Special Operations</td>
</tr>
</tbody>
</table>

3.2. **MTA – New York City Transit – Department of Buses / Facilities**
Matters related to the St. George Bus Station facility itself including the design and construction of the holding lights and PA system shall be directed to Mr. Jay Sherman at (718) 927-8217.

3.3. **MTA – NYCT - Staten Island Rapid Transit Operating Authority (SIRTOA):**
The Company shall contact NYCT – Outside Projects and SIRTOA for all required review and approvals including those related to lead paint removal, environmental protection and waste handling. In addition, the Company’s design and construction methodology must follow all SIRTOA requirements outlined in Exhibit G. The contact persons for NYCT and SIRTOA are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Rajen Udeshi</td>
<td>Principal Engineer Outside Projects</td>
</tr>
<tr>
<td></td>
<td>NYC Transit</td>
</tr>
<tr>
<td></td>
<td>2 Broadway</td>
</tr>
<tr>
<td></td>
<td>New York, NY 10004</td>
</tr>
<tr>
<td></td>
<td>(646) 252-3673</td>
</tr>
<tr>
<td>Mr. Samuil Kolta</td>
<td>Director, Engineering and Capital Programs</td>
</tr>
<tr>
<td></td>
<td>SIRTOA</td>
</tr>
<tr>
<td></td>
<td>60 Bay Street</td>
</tr>
<tr>
<td></td>
<td>Staten Island, NY 10301</td>
</tr>
<tr>
<td></td>
<td>(718) 876-8252</td>
</tr>
</tbody>
</table>
As per the requirements given in Exhibit G, the NYCT contact person for requesting Authority Supplied Services (e.g. flaggers, service diversions, etc.), scheduling Safety Training and submitting required insurance certificates to is:

Mr. Miron Kuchuk  
Administrative Project Manager,  
Engineering Services – Bridges  
Capital Program Management  
MTA - New York City Transit  
2 Broadway, Room B7.145  /New York, NY 10004  
(646) 252-3653

3.4. **NYCDOT – Passenger Transport Division (Ferries)**  
The Company shall contact NYCDOT – Ferries for all required review and approvals. In addition, the Company’s design and construction methodology must follow all requirements outlined in the Special Provisions in Exhibit H. The contact person for NYCDOT – Ferries is:

Captain James DeSimone  
Chief Operations Officer  
Passenger Transport  
1 Bay Street - 1st Floor  
Staten Island, NY  
(718) 876-2657

Frank Nicolosi  
Terminal Manager  
Passenger Transport  
1 Bay Street - 1st Floor  
Staten Island, NY  
(718) 876-4020

Matters relating to security at the St. George Ferry Terminal should be directed to the Executive Director of Security and Safety, Ms. Margaret Gordon at (718) 876-6332.

3.5. **NYCDOT – Bureau of Parking**  
The Company shall contact NYCDOT – Bureau of Parking for all required reviews and approvals related to work that impacts the operation of the South and North Municipal Parking Fields. This includes but is not limited to temporary relocation of parking spaces when working on Ramp C (BIN 2269780) and under Ramp B (BIN 2269770), Taxi Stand relocation to the North Municipal Parking Field during Bus Station deck reconstruction and staged reconstruction/re-surfacing of the North Municipal Parking Field after demolition of the existing North Ramp (BIN2269760).

The contact person for NYCDOT – Bureau of Parking is:

Mr. John Girardi  
Director of Engineering  
NYCDOT -Bureau of Parking  
34-02 Queens Boulevard  
Long Island City, NY 11101  
(718) 786-6984

(718) 937-1370
3.6. **NYCDOT – Traffic Planning / Taxi Program**
The Company shall contact NYCDOT – Division of Traffic Planning / Taxi Program for coordination and review of relocated taxi service signage. The contact persons for NYCDOT – Traffic Planning / Taxi Program are:

- **Mr. Ryan Russo**
  Director, Street Management & Safety
  Offices of Alternatives Modes & School Safety Engineering
  40 Worth Street – Room 1035
  New York, NY 10013
  (212) 442-7320 (Tel.)
  (212) 442-7823 (Fax)

- **Ms. Nancy Wright**
  Director, Community and Business Outreach
  Office of Alternative Modes
  Division of Traffic Operations - NYCDOT
  40 Worth Street, Room 1035
  New York, NY 10013
  (212) 442-7647 (Tel.)
  (212) 442-7823 (Fax)

3.7. **NYC Economic Development Corp. (EDC) – Parking Lot Management**
The East Stadium Parking Lot located between the existing North Ramp (BIN 2269760) and the Richmond County Bank Ballpark is operated by a private contractor for NYCEDC. The contact person for all field work related to the East Stadium (EDC) Parking Lot is:

- **Mr. Ronald Day**
  NYCEDC – Property Management
  (212) 312-3628
  (212) 312-3919

3.8. **NYC Economic Development Corp. (EDC) – Planning**
The new North Ramp is to be located in the East Stadium Parking Lot immediately adjacent to the NYC owned Richmond County Bank Ballpark. The New York City Economic Development Corporation oversaw the construction of the ballpark and currently provides management services on behalf of the City. Design plans for the new North Ramp must be submitted to NYCEDC for approval of any modifications to the existing East Stadium Parking Lot, the stadium walkway and the plazas at Richmond Terrace and the Waterfront Esplanade. The contact person for all design work related to the stadium and parking lot is:

- **Mr. David Kane, P.E.**
  Vice President – Capital Projects
  NYCEDC
  110 William Street, 6th Floor
  New York, NY 10038
  (212) 312-3723

3.9. **NYC Economic Development Corp. (EDC) – Lighthouse Museum / Harbor Site**
New York City Economic Development Corporation (EDC) recently designated Triangle Equities Development Company LLC to acquire and develop the three-acre Lighthouse Harbor Site adjacent to the St. George Ferry Terminal in Staten Island. Triangle proposes to renovate three historic buildings and six unique underground vaults for retail and residential uses, and construct two residential buildings and parking facilities on the vacant areas of the site. The City will retain ownership of two other buildings on the site which will be leased to the National Lighthouse Museum for its future home.
Construction work is scheduled to begin in the spring of 2008 and take approximately two years to complete.

Although the designated means of access to the Lighthouse Harbor site will be from Bay Street approximately a half a mile south of the Terminal it is possible to access the site from Ramp A (Borough Place). Due to the close proximity of the two sites and potential overlap in construction schedules, the Company is requested to contact and discuss their proposed construction schedule/activities for Ramp A with NYCEDC. The contact person for EDC is:

Ms. Dana Sunshine - NYCEDC
110 Williams Street
New York, NY 10039
(212) 312-6380

3.10. NYC Economic Development Corp. (EDC) – St. George Ferry Terminal Renovation
The contact person from EDC regarding construction of the St. George Ferry Terminal Renovation project is Mr. Jawad Assaf (212) 312-3715.

3.11. Staten Island-Brooklyn Mobility Enhancement Project
NYCDOT along with other public agencies are in the process of evaluating “out of the box” solutions to address transportation and traffic issues facing Victory Boulevard and Bay Street in Staten Island. The strategy currently being studied involves investigating, designing and deploying a Transit Signal Priority (TSP) system for NYCT buses on a 2.3 mile segment, between Bay Street and Forest Avenue and Bay Street from Victory Boulevard to the St. George Ferry Terminal.

The finding of this project should be considered by the Company when designing MPT strategies for construction as well as in the Richmond Terrace Traffic Study.

The NYCDOT contact person for updates on the status of this project is:

Mr. Emad Makarious
NYCDOT
Signals and ITS Engineering
34-02 Queens Blvd., 2nd Floor
Long Island, City, NY 11101
(718) 786-8293

3.12. NYS Department of Environmental Conservation
The Company shall contact New York State Department of Conservation to apply for and secure all necessary permits. As a minimum the Company will need to obtain coverage under the SPDES General Permit for Stormwater Discharges from Construction Activities (GP-02-01), issued January 8, 2003. The stormwater resulting from construction must be managed in accordance with the SPDES General Permit No. GP-02-01 and the New York Guidelines for Urban Erosion & Sediment Control (The Blue Book).

Permit applications shall be addressed to:

Mr. John Cryan
Regional Permit Administrator
Division of Environmental Permits
3.13. **Army Corp of Engineers**

The Company shall contact the Army Corp of Engineers to apply for and secure all necessary permits for work in the waterway or on the bulkhead as may be necessary to facilitate outfall reconstruction.

Permit applications shall be sent to the attention of:

Regulatory Branch Eastern Permits
CENAN-OP-RE
US Army Corps of Engineers
26 Federal Plaza
New York, NY 10278

3.14. **Coastal Zone Federal Consistency Review**

All work in designated coastal zone areas is subject to a review by New York State Department of State to ensure that the proposed activities are consistent with federal and State Coastal Zone Management Programs.

Consistency Assessment Forms shall be sent to the attention of:

Division of Coastal Resources Consistency Review
NYS Department of State
Coastal Management Program
41 State Street
Albany, NY 12231

Certification for Consistency with the local NYC Waterfront Revitalization Program shall be sent to:

Mr. Wilbur Woods
Department of City Planning
Waterfront & Open Space Division
City of New York
22 Reade Street
New York, NY 10007-1215
4. **DESIGN SPECIFICATIONS**

All design work must meet the approval of NYCDOT. Information on the bridge superstructure and substructure type, and other structural features shall be provided by the Company’s Engineer. All new structural items shall meet current design standards as indicated above. New bridge superstructures and reconstructed decks shall be designed and detailed using suitable materials and high quality components and constructed in a manner that ensures a long service life with reduced future maintenance requirements.

**Bridge Design Specifications**

Design shall be in accordance with the current AASHTO Standard Specifications for Highway Bridges as amended by NYSDOT Bridge Manual, and NYSDOT (Blue Pages).

**Design Method**

(a) Service Load Design Method (Allowable Stress Design) of AASHTO shall be used for all rehabilitation design and strength evaluations.

(b) Load and Resistance Factor Design (LRFD) Method of AASHTO shall be used for new construction. This will apply to the entire reconstructed North Ramp (BIN 2269760) and the reconstructed superstructure of Ramp A (BIN 2270180).

(c) Design details shall be in accordance with the Applicable Codes and Standards listed above. English unit format shall be used for all design drawings and calculations.

4.1. **DESIGN LOADING**

4.1.1. **Dead Load:**

(a) Unit Weight for all reinforced and prestressed concrete, including reinforcing steel: 150 pcf

(b) Additional wearing surface: 30 psf

(c) Stay in Place forms: 4 psf (timber) 16 psf (metal corrugated)

(d) Structural steel: 490 pcf

(e) Utilities: Based on actual self-weight

4.1.2. **Live Load:**

The design live loads* are specified as follows:

(a) All decks and deck joints on rehabilitated structures shall be designed for HS-20 Loading. Decks and deck joints supported on new superstructures shall be designed for HS-25 Loading. All sidewalks shall be designed for a pedestrian Live Load of 85 lbs/ft².

(b) All bridge railings and barriers/parapets shall be designed to satisfy current AASHTO criteria and meet NCHRP 350 standards for Test Level 4 (TL-4) service. Design details, deflection, vibrations, allowable fatigue stress, and minimum thickness of metal in accordance with AASHTO.

* Seven of the nine bridges in the project have been load rated as part of the biennial bridge inspection program. The Level 1 and 2 ratings for the controlling members are summarized in the following Table. Only the North Ramp has members that do not rate for HS-20 Loading. The remaining six bridges do
currently rate for HS-20 Loading. However, it is the Company’s responsibility to verify that the ratings levels still satisfy HS-20 Loading in their rehabilitated condition. To further clarify, only those members that will see an increase in loading conditions (e.g. the addition of barriers, sidewalks, etc.) would have to be re-rated.

Ramp A (BIN 2270180) and the Pedestrian Breezeway (BIN 2270170) were never inspected under the NYSDOT Biennial inspection program and as such have not been rated.

<table>
<thead>
<tr>
<th>Load Rating Type</th>
<th>Ramp D</th>
<th>Bus Station North</th>
<th>Bus Station South</th>
<th>North Ramp</th>
<th>Ramp B</th>
<th>Ramp C</th>
<th>Old Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H Inventory</td>
<td>2269730</td>
<td>2269740</td>
<td>2269750</td>
<td>2269760</td>
<td>2269770</td>
<td>2269780</td>
<td>2269790</td>
</tr>
<tr>
<td>H Operating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS Inventory</td>
<td>36</td>
<td>36</td>
<td></td>
<td></td>
<td>36</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>HS Operating</td>
<td>60</td>
<td>60</td>
<td></td>
<td></td>
<td>60</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>LEVEL 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H Inventory</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H Operating</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS Inventory</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS Operating</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(c) Load ratings for substructure elements do not exist for these ramps and will not be required as part of this Project Scope.

4.1.3. Impact:
Impact allowance shall be calculated per AASHTO Specifications.

4.1.4. Wind Load:
Wind loads shall be in accordance with AASHTO specifications.

4.1.5. Thermal Forces:
Range of temperature variation shall be in accordance with AASHTO Subsection 3.16 with Normal Temperature: 68°F for moderate climate.

4.1.6. Seismic Forces:
Ramp A does not need to be designed for seismic forces. However minimum support length shall be provided for the beams in accordance with current AASHTO Division 1-A criteria.

The North Ramp shall be considered an “Other” structure and be designed in accordance with the current NYCDOT Seismic Design Guidelines.

The remaining seven structures in this project do not require seismic retrofitting as part of their rehabilitation scope.
Performance Criteria and Seismic Hazard Levels

Performance criteria address the safety and functional performance of the bridges after the earthquake. They are defined in terms of the bridge’s post seismic service level and the extent of the damage.

The required performance of a bridge is determined according to its importance rank. NYCDOT bridges are classified as Critical, Essential and Others following the 1994 LRFD AASHTO Section 3.10.3. No collapse is allowed in any case.

Essential and Others bridges shall be analyzed for a single level seismic event consisting of a spectrum equal to the Panel’s 2% in 50 yr (2500 yr RP) divided by 1.5. This spectrum follows the 1997 NEHRP approach by establishing a design spectrum with sufficient safety margin for the 2% in 50 yr. earthquake in regions where the 10% in 50yr motions are very low. Essential bridges shall survive this event with repairable damage and emergency access should be immediate. Bridges classified as Others may suffer significant damage although collapse shall not occur.

Multi-span bridges of any type (continuous or single spans), classified as Essential or Others, shall be analyzed by the modal analysis method, and supplemented in some cases by non-linear static (pushover) analysis to account, for example, for ductility of materials or details.

For single span bridges classified as Essential or Others, a detailed analysis is not currently required. Design requirements for the connections are necessary to prevent damage and excessive deflections. The connection is designed to resist a force equal to A x (sum of maximum dead load and live load reaction) (see NYSDOT blue pages). The A value shall equal the PGA corresponding to the soil on which the bridge is founded (for example A= 0.16 for hard rock, see Figure 2). However, these structures do not have zero period and therefore seismic accelerations will exceed the A value (=PGA). Abutment damage can be expected in the event of an earthquake. Nevertheless, collapse will not take place, provided there is adequate support length.

Soil Effects

For Bridges designed for the one level approach (Essential and Others), Figure 2 in the NYC Seismic Guidelines shows the spectra to be used for different soil types (soil classes). These curves were obtained by scaling the 1997 NEHRP Soil Class B amplification factors. Soil classes are defined in Table 2 of the NYC Seismic Guidelines.

4.1.7. Fatigue Stresses

Given that the seven (7) vehicular structures do not routinely carry heavy truck loads and there has been no evidence of fatigue cracking during previous inspections, it is not anticipated that retrofitting of fatigue details will be necessary. However, Proposers shall perform a fatigue analysis of all Category E and E’ details on Ramp Structure B (BIN 2269770) and Bus Station South (BIN 2269750) as part of the Bridge / Site Inspection Task. The findings of these analyses, along with any retrofit recommendations and
associated construction costs, should be presented in the Inspection Findings Report. The cost of performing these analyses shall be included in Item No. 6 – Bridge / Site Inspections.

If at that time it is determined that fatigue retrofitting is warranted, the cost of final design, construction support services and construction of approved retrofit details will be paid for under the Incidental Repair item of this Design/Build Contract.

4.2. LOAD COMBINATIONS
Section 3 of AASHTO Standard Specifications for Highway Bridges, as amended by NYSDOT (Blue Pages).

4.3. CONCRETE STRUCTURES OR COMPONENTS

4.3.1. Concrete Classifications
As per NYSDOT Standard Specifications unless noted otherwise.

(a) Concrete in Footings shall conform to Class A concrete as per NYSDOT Standard Specifications, Construction and Materials. Concrete compressive ($f'_c$) strength at 28 days (for design purposes only) shall be chosen as 3,000psi.

(b) Concrete in Substructure Class A or HP concrete as per NYSDOT Standard Specifications, Construction and Materials. Concrete compressive ($f'_c$) strength at 28 days (for design purposes only) shall be chosen as 3,000psi.

(c) Concrete in Parapets/Barriers shall conform to Class HP concrete as per NYSDOT Standard Specifications, Construction and Materials. Concrete compressive ($f'_c$) strength at 28 days (for design purposes only) shall be chosen as 3,000psi.

(d) Concrete in Deck Slabs shall conform to Class HP concrete as per NYSDOT Standard Specifications, Construction and Materials. Concrete compressive ($f'_c$) strength at 28 days (for design purposes only) shall be chosen as 3,000psi.

4.3.2. Reinforcing Steel
All reinforcing steel in decks and parapets / barriers shall be epoxy coated and shall conform to requirements of Section 709.04.

Minimum Concrete Cover

(a) Concrete cast against and permanently exposed to earth 3”

(b) Concrete exposed to earth or weather
Primary reinforcement 2”
Stirrups, ties, and spirals 1.5”

(c) Concrete deck slabs
Top reinforcement with integral wearing surface 3”
Bottom reinforcement with S.I.P. forms 1.5”

(d) Concrete not exposed to weather or in contact with ground
Primary reinforcement 1.5”

(e) Stirrups, ties, and spirals 1”
4.3.3. Staged Deck Replacement
Where staged deck replacement is proposed, the Company shall address the issue of excessive vibrations due to adjacent live load during casting and curing in their design and method of construction.

Schemes proposing to use staged, cast-in-place construction for the deck replacement on Ramp B will have to perform pouring operations at night with the Ramp closed to all traffic. The Company will be responsible for developing an alternate scheme to accommodate bus operations. Potential strategies include but are not limited to utilizing the Old Viaduct (existing Bus Exit) to accommodate two way traffic or relocating passenger pick-up/drop-off along Richmond Terrace or else where within the Terminal.

4.3.4. Mechanical Splices are allowed for staged deck construction and pier column applications.

4.3.5. The use of SIP forms is permitted in all locations except the new North Ramp due to aesthetic reasons.

4.3.6. A concrete penetrating sealer shall be applied to the riding surface of all construction joints in staged monolithic deck construction.

4.3.7. High Early Strength Concrete
If and where high early strength concrete is proposed (3-day strengths greater than 3,000 psi), the Company shall address the concern of excessive cracking in their mix design and method of casting and curing.

4.3.8. A list of acceptable New York State/New York City approved concrete production plants can be obtained from QA Division of Bridges; contact Mohammed Afzal at (212) 788-1833.

4.3.9. Expansion Deck Joints
The Company shall consider the difficult structural and geometrical conditions (e.g. excessive deck vibrations, lateral movement, severe skew angles, etc.) and limited routine maintenance when designing and detailing new expansion deck joints. Where feasible and warranted the Company shall install a supplemental catch/trough system under critical joints to collect/divert water away from steel superstructure members in the event the new deck joint system begins to leak in the future. As a minimum all of the expansion joints over the St. George Ferry Terminal Building and the SIR Station should be considered critical.

4.3.10. Existing Concrete Deck Removal
To reduce noise and dust generated during deck demolition, the Company shall remove existing decks by means of sawcutting and lifting deck out of place in panels wherever possible. The use of chipping hammers should be limited to those areas where sawcutting is not feasible such as over structural steel members designated to remain.
4.4. **STRUCTURAL STEEL COMPONENTS**

4.4.1. **Materials**
Structural steel for rehabilitated structures shall conform to the requirements of AASHTO M270 Grade 36 (ASTM A709). Structural steel for new structures shall conform to either AASHTO M270 Grade 36 or Grade 50 (ASTM A709). The use of AASHTO M270 Grade HPS70W on new structures will not be permitted due to the project site’s close proximity to a marine environment.

High Strength Bolts shall conform to ASTM A325.

Anchor Bolts shall conform to ASTM A449.

5. **DESIGN CRITERIA – NORTH RAMP**
The new North Ramp must be designed to:
(a) Maintain all existing points of stadium access below the ramp.
(b) Allow for a minimum of 20 parking spaces underneath the ramp.
(c) Provide a minimum vertical clearance of 16'-6” above top of rail.
(d) Provide sufficient turning radius at the top and bottom of the ramp for fire fighting equipment to access SIRTOA tracks.
(e) Provide a smooth transition with approach roadways and esplanade area to ensure safe pedestrian passage.

6. **CLEARANCES**
Wherever feasible, all temporary construction platforms and equipment shall be located above the bottom flanges of the girders.

For areas over active railroad tracks where it is necessary to erect containment systems below the bottom flange of the girders it must be done in a manner that provides sufficient clearance to satisfy the requirements given in Section 2 of Exhibit G – Railroad Requirements. If this is not possible then this work must be performed under a diversion of service as stipulated in Section 2 of Exhibit G – Railroad Requirements.

7. **BRIDGE MOUNTED UTILITIES**
The Company shall verify the location of all existing utilities on the bridges prior to the start of construction. All bridge mounted utilities shall be protected during construction. If it is necessary to relocate these utilities it will be the responsibility of the Company to notify and coordinate this work with the respective owners. Unless otherwise noted in this RFP, no separate payment will be made for temporarily protecting, supporting and/or relocating utilities for the purposes of performing the proposed work. This cost is considered incidental to the project and is deemed included in the price bid.

If it is necessary to permanently relocate utilities on a bridge they are to be supported by their own support bracket properly attached to the superstructure. Any deviation from above will need special approval from the Deputy Chief Engineer (DCE) of Specialty Engineering.

8. **SUB-SURFACE UTILITIES**
A sub-surface utility survey was not performed as part of the preliminary engineering services for this project. Information on sub-surface utilities in the vicinity of the new North Ramp is included in the civil drawings from the contract to construct the Richmond County Bank
Stadium and adjacent parking lots. These contract plans along with all the other available reference material listed in the table in Section 12 of Exhibit A in Book 2: Volume 1 are provided as a separate attachment to this RFP.

9. **ASBESTOS CONTAINING MATERIALS**
As detailed in the Asbestos Survey Report and the Environmental Analysis Plan in Exhibit A, there are asbestos containing materials on the site that will be encountered during this project. It shall be the responsibility of the Company to identify them, remove them and safely dispose of them in accordance with all applicable city, state and federal regulations. All permits required for the purpose shall be the responsibility of the Company and should indemnify the City of New York from all consequences of their actions.

10. **CLEANING AND PAINTING OF STRUCTURAL STEEL**
The project scope includes abrasive blast cleaning and painting of all exposed structural steel including that on the Bus Exit Ramp – Old Viaduct (BIN 2269790) once concrete encasement has been removed.

Work related to lead paint removal and disposal must be done in accordance with NYCDOT Section 832, Specification for Lead Paint Removal – Worker/Environmental Protection and Waste Handling as augmented by NYCT Specification Section 12LL – Environmental Protection and Waste Disposal for areas on/over SIRTOA’s Right-of-Way. Painting work shall be done in accordance with NYCDOT Section 831, Specification for Painting.

More detailed information on the project specific requirements for cleaning and painting of structural steel is given in Exhibit I – Cleaning and Painting Requirements of this Book.

11. **SURFACE PREPARATION REQUIREMENTS FOR TOP FLANGES IN CONTACT WITH CONCRETE**
Given the age and condition of the project bridges, it is likely that the top flanges, once exposed, will exhibit a thick layer of rust. This layer of rust, regardless of whether it contains lead paint or not, must be removed prior to installing / replacing shear connectors and pouring the new concrete deck. Proposers are to assume that the required cleaning methods will be SSPC SP-II Power Tool Cleaning to Bare Metal for the top surface of the flanges (that is, flanges to be in contact with the new deck) with containment accomplished via SSPC Class 3P and cleaning by vacuum shrouded HEPA-Filtered power assisted hand tools.

Unless a rigorous sampling and testing program is undertaken by the Company at each bridge to prove that lead paint is not present, Proposers shall assume that the top surface of the flanges contains lead and that all lead removal activities must be performed in accordance with the requirements outlined in Exhibit I – Cleaning and Painting Requirements in Book 2: Volume 2. Once the top surface has been cleaned to bare metal, a thin layer of zinc paint shall be applied to preserve the surface from rusting during installation of formwork and shear studs.

12. **BRIDGE/SITE DRAINAGE**
The bridge drainage systems on the project ramps are currently not functioning due to an accumulation of debris and sediment in the scuppers and downspouts as well as hardened concrete in the underground pipes. The project scope calls for a complete replacement of these
systems to ensure unrestricted flow from the various bridges collection points to the final discharge location in the Upper New York Bay.

In some areas the existing underground pipes are on SIRTOA’s ROW underneath tracks. Replacement of these pipes will not be permitted. New elevated pipes shall be installed to carry stormwater off the bridges, beyond SIRTOA’s ROW, before tying into an underground system. The elevated pipes shall be supported on the bridge framing and in no case shall the pipe or its support be lower than 16'-6” when over tracks. Existing underground pipes should be filled with concrete and capped where ever it can be confirmed by inspection that they are not part of the track drainage system. Where underground pipes are part of the track drainage system they must be tied into the new system.

The Company must design the system to handle the anticipated demand from the stormwater collection area of each bridge but in no case shall the system have less capacity than the existing system. All downspouts shall be a minimum of 12” in diameter.

Site drainage work shall consist of but is not limited to replacement of existing pipes, manholes, catch basins, trench drains, etc as warranted to ensure unrestricted flow from the various collection points to final outfall. The existing vitreous tile pipes (VTP) shall be replaced with ductile iron pipes using press-on type joints and conforming to the latest revisions of New York City Department of Environmental Protection Specifications, Sections 2.10 and 2.02, available from the Office of the Chief Water Main Failure Analysis, 59-17 Junction Boulevard, 3rd Floor Low Rise, Flushing, New York 11373.

Repair, replacement and/or improvements to the existing outfalls shall not be considered part of the of the scope of work for this contract.

13. ENVIRONMENTAL CONDITIONS – SOIL AND GROUNDWATER
Several soil studies have been performed at the St. George Ferry Terminal in anticipation of the proposed work. TCLP tests were performed on soils in the location where the new North Ramp is to be constructed. The results demonstrated that the soil is non-hazardous. However for hauling and disposal purposes this soil should be considered contaminated material classified as non-hazardous, non-petroleum industrial waste and should be considered not suitable for re-use. These findings are presented in the Geotechnical Report contained in Exhibit A.

Soil sampling and analysis was not performed in those locations where the new underground storm water lines are anticipated. The Company will be required to perform sampling and have TCLP analysis performed on these soils. The results of this work are to be submitted to the Engineer for review and comment. Until such time as test results are available, the Company shall consider these soils to be contaminated material classified as non-hazardous, non-petroleum industrial waste and should not be considered suitable for re-use. Soil hauling and disposal must comply with all applicable regulations.

In the event that TCLP analysis classifies any soils on the site to be hazardous material, then hauling and disposal costs would be paid for under the applicable unit price bid for that item. If TCLP analysis classifies this material as non-hazardous material suitable for disposal offsite as clean material, then NYCDOT reserves the right to request a negotiated credit for the difference between bid cost and actual disposal costs. Furthermore if soil testing indicates that the soil is suitable for
re-use on site, then the Company may request approval for its re-use with the understanding, if granted, that NYCDOT reserves the right to request a negotiated credit for the difference of furnishing new fill material versus re-using existing.

In addition to soil borings, a groundwater monitoring well was installed at the location where the new North Ramp is to be constructed. Depth to groundwater was found to vary between 5 and 7 feet below grade. Two rounds of groundwater sampling and analysis were performed. One compound, Tetrachloroethene, was found to slightly exceed NYSDEC TAGM for groundwater quality (9.1 ug/l vs. DEC standard of 5.0 ug/l). The results are discussed in the Geotechnical Report in Section 5 of Exhibit A in Book 2: Volume 1. Should dewatering be required, the Company shall prepare and submit a plan on how the dewatering process will occur, expected volumes, storage requirements, treatment requirements, and disposal needs. All dewatering, treatment, and disposal needs are to be in compliance with applicable regulatory requirements. This plan will be submitted to the Engineer for review, comment and approval.

For bidding purposes, Proposers shall assume that groundwater in the vicinity of the proposed North Ramp is not contaminated.

14. **BRIDGE LIGHTING**

New bridge lighting is to be designed and constructed to meet current NYCDOT Street Lighting standards and illumination levels.

Existing lighting standards are mounted on steel bridge barriers to be removed and replaced with concrete barriers. During construction temporary lighting will need to be installed to provide the minimum required illumination level as per NYCDOT standards until the permanent system is in place and operational.

The electrical systems design, removal, and construction, and installation shall conform to the applicable sections of the current National Electric Code (NFPA) and the National Electric Safety Code (IEEE).

Underbridge lighting shall be designed to provide sufficient level of illumination in all public areas as well as throughout the track area of the St. George Interlocking.

Underbridge lighting in the areas over SIRTOA’s ROW will be maintained and operated by SIRTOA as per the Memorandum of Understanding between NYCDOT and SIRTOA included in Exhibit J of this Book. The lighting system in this area shall be designed such that it is accessible for future maintenance by SIRTOA forces and that it is metered independent of the rest of the bridge lighting on this project. The Company is to coordinate with and submit lighting plans to SIRTOA for their review and approval.

The existing on-site power supply shall be considered sufficient for the purposes of feeding the new bridge lighting systems.

15. **BRIDGE FENCING**

Pedestrian fencing is required on all bridges crossing over persons or over property that can be damaged by thrown objects. This includes sidewalks, parking areas and SIRTOA ROW. Fencing should be of metallic mesh and the maximum opening size of the mesh used shall be one-inch. The fencing shall have a minimum height of 8'-0" above top of the sidewalk. The top of the post
shall be curved in by 1'-6". In place of curve, an inward bend of 45 to 90 degrees will be acceptable. Exceptions to any of these requirements must be approved by the Chief Bridge Officer.

For additional criteria regarding approved fencing material see Item 15 - Art Commission of this Exhibit.

16. PIGEON DETERRENT SYSTEM
An electrified wire pigeon deterrent system shall be installed on the structural framing of those project bridges spanning over pedestrian walkways, parking lots, station platforms and train storage areas. This system shall not be installed on horizontal surfaces less than 10 feet in height.

The system manufacturer will be responsible for designing a system that eliminates the existing pigeon roosting problem at the St. George SIR Station and public areas outside the Terminal. The manufacturer shall provide a minimum three year guarantee on materials and effectiveness of installation.

The system shall be as manufactured by Avian Flyaway of Rockwell, TX or approved equal.

The existing on-site power supply shall be considered sufficient for the purposes of feeding the proposed electrified pigeon deterrent system.

17. ART COMMISSION
Art Commission approval is required for all new bridges in New York City; as such the new North Ramp (BIN 2269760) will need to be presented for approval.

Additional items that require Art Commission approval include:

a) any architectural enhancements proposed by the Company to improve the aesthetic of Bus Station North (BIN 2269740), Bus Station South (BIN 2269759) and the Pedestrian Breezeway (BIN 2270170)
b) any new fencing introduced by the project
c) structural steel finish paint color

17.1. SUBMISSION GUIDELINES
All Art Commission (AC) submissions must conform to the latest AC Submission Guideline Requirements. Failure to conform will result in denial to review by the Art Commission which could in turn jeopardize the project schedule. The Company is strongly advised to make Art Commission submissions as soon after NTP as possible.

17.2. FENCING
The fencing material to be used for this project has not yet been determined as there are on going discussions between NYCDOT and the Art Commission. For price proposal purposes, Proposers are being asked to assume the most expensive option that the Art Commission has approved in the past. That is fencing material made from a 1” x 1” interwoven stainless steel crimp mesh as manufactured by McNichols of Tamps, FL at a unit price of $20/SF.

17.3. FINISH PAINT COLOR
The finish color of the steel must be approved by the Art Commission. The Company is strongly advised to submit finish color recommendations to the Art Commission as soon
as possible after NTP to allow sufficient time for review and approval.

Currently the only approved paint colors for the Art Commission to choose from are:

a) Munsel Grey (Fed Color No. 26173)
b) Dark Green (Fed Color No. 34092)
c) Blue (Fed Color No. 15095)
d) Pulaski Red (Custom color made from sample)
e) Deep Cool Red (Custom color made from sample)

18. **ADDITIONAL REQUIREMENTS**

The Company must be familiar with the requirements of all affected agencies/entities and must incorporate any relevant considerations in its Technical and Price Proposal.

In addition all the Engineering Instructions issued by the date the Request for Proposal is being advertised should be taken into consideration and incorporated in the Company’s Technical and Price Proposal.
EXHIBIT C
PROGRESS PAYMENT SCHEDULE
Company name: ____________________________

The Department shall make Progress Payments to the Company in accordance with the following Schedule or Milestones. The Company may add Milestones in accordance with its Rehabilitation. Dollar values are to be filled in for each structure and cumulative totals.

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Dollar Amount</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Mobilization Cost (NTE 4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0 Cost for Permits, Bonds, Insurance and Upfront Coordination (NTE 6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0 Engineer’s Office /PC/Supplies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0 Community Outreach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.0 Traffic Study – Richmond Terrace / Terminal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0 DESIGN SERVICES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1 Bridge / Site Inspections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2 Bridge / Site Surveys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3 Old Viaduct – Assessment and Recommendations for Steel Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4 Site Drainage – Design Report and Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5 Maintenance and Protection of Traffic / Construction Staging Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.6 Lead Paint Removal, Disposal &amp; Painting Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.7 Architectural Enhancements (Bus Canopies &amp; Pedestrian Bridge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.8 Ramp A (BIN 2270180)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.9 Ramp B (BIN 2269770)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.10 Ramp C (BIN 2269780)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.11 Ramp D (BIN 2269730)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.12 Bus Station North (BIN 2269740)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.13 Bus Station South (BIN 2269750)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.14 Bus Exit Ramp – Old Viaduct (BIN 2269790)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.15 Pedestrian Breezeway (BIN 2270170)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.16 North Ramp (BIN 2269760)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.17 North Municipal Parking Field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.18 Bus Canopy Package</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.19 Public Utilities (Exclusive of Site Drainage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milestone</td>
<td>Dollar Amount</td>
<td>Total</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
<td>-------</td>
</tr>
<tr>
<td>7.0 Construction Support Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.1 Site Drainage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2 Maintenance and Protection of Traffic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.3 Lead Paint Removal, Disposal &amp; Painting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.4 Ramp A (BIN 2270180)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5 Ramp B (BIN 2269770)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.6 Ramp C (BIN 2269780)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.7 Ramp D (BIN 2269730)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.8 Bus Station North (BIN 2269740)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.9 Bus Station South (BIN 2269750)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.10 Bus Exit Ramp – Old Viaduct (BIN 2269790)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.11 Pedestrian Breezeway (BIN 2270170)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.12 North Ramp (BIN 2269760)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.13 North Municipal Parking Field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.14 Bus Canopy Package</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.15 Public Utilities (Exclusive of Site Drainage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.0 Construction of Ramp A (BIN 2270180)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.1 Maintenance and Protection of Traffic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.2 Demolition/Clearing Site/Temporary Shielding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.3 Concrete Abutment Repair / Modifications / Pedestal Reconstruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4 Superstructure Replacement Including Bearings, Beams, Deck &amp; Joints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.5 Concrete Barrier Construction (Bridge and Approaches)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.6 Bridge Mounted Fencing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.7 Miscellaneous Approach and Plaza Restoration Work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.0 Construction of Ramp B (BIN 2269770)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.1 Maintenance and Protection of Traffic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.2 Demolition/Clearing Site/Temporary Shielding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.3 Concrete Substructure Repair Including Pedestal Reconstruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.4 Concrete Deck and Sidewalk Construction Including Installation of Shear Studs and Expansion Joints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.5 Concrete Barrier and Parapet Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.6 Bridge Mounted Fencing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.7 Containment System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.8 Cleaning Exist Structural Steel (Lead Abatement Required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.9 Painting Exist Structural Steel (Paint System B’)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milestone</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>9.10</td>
<td>Painting Exist Structural Steel (Paint System K’)</td>
<td></td>
</tr>
<tr>
<td>9.11</td>
<td>Structural Steel Repair / Modifications &amp; Bearing Replacement</td>
<td></td>
</tr>
<tr>
<td>9.12</td>
<td>Bridge Drainage System Replacement Incl. Scuppers &amp; Downspouts</td>
<td></td>
</tr>
<tr>
<td>9.13</td>
<td>Bridge Mounted Lighting System</td>
<td></td>
</tr>
<tr>
<td>9.14</td>
<td>Underbridge Lighting System</td>
<td></td>
</tr>
<tr>
<td>9.15</td>
<td>Pigeon Deterrent System</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>Construction of Ramp C (BIN 2269780)</td>
</tr>
<tr>
<td>10.1</td>
<td>Maintenance and Protection of Traffic</td>
</tr>
<tr>
<td>10.2</td>
<td>Demolition/Clearing Site/Temporary Shielding</td>
</tr>
<tr>
<td>10.3</td>
<td>Concrete Substructure Repair Including Pedestal Reconstruction</td>
</tr>
<tr>
<td>10.4</td>
<td>Concrete Deck and Sidewalk Construction Including Expansion Joints</td>
</tr>
<tr>
<td>10.5</td>
<td>Concrete Barrier and Parapet Construction</td>
</tr>
<tr>
<td>10.6</td>
<td>Bridge Mounted Fencing</td>
</tr>
<tr>
<td>10.7</td>
<td>Containment System</td>
</tr>
<tr>
<td>10.8</td>
<td>Cleaning Exist Structural Steel (Lead Abatement Required)</td>
</tr>
<tr>
<td>10.9</td>
<td>Painting Exist Structural Steel (Paint System B’)</td>
</tr>
<tr>
<td>10.10</td>
<td>Painting Exist Structural Steel (Paint System K’)</td>
</tr>
<tr>
<td>10.11</td>
<td>Structural Steel Repair / Modifications &amp; Bearing Replacement</td>
</tr>
<tr>
<td>10.12</td>
<td>Bridge Drainage System Replacement Including Scuppers, Overhead Pipes and Downspouts</td>
</tr>
<tr>
<td>10.13</td>
<td>Bridge Mounted Lighting System Replacement</td>
</tr>
<tr>
<td>10.14</td>
<td>Underbridge Lighting System Replacement</td>
</tr>
<tr>
<td>10.15</td>
<td>Miscellaneous Approach Repair/Restoration Work</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.0</td>
<td>Construction of Ramp D (BIN 2269730)</td>
</tr>
<tr>
<td>11.1</td>
<td>Maintenance and Protection of Traffic</td>
</tr>
<tr>
<td>11.2</td>
<td>Demolition/Clearing Site/Temporary Shielding</td>
</tr>
<tr>
<td>11.3</td>
<td>Concrete Substructure Repair Including Pedestal Reconstruction</td>
</tr>
<tr>
<td>11.4</td>
<td>Concrete Deck and Sidewalk Construction Including Expansion Joints</td>
</tr>
<tr>
<td>11.5</td>
<td>Fascia Mounted Fencing</td>
</tr>
<tr>
<td>11.6</td>
<td>Containment System</td>
</tr>
<tr>
<td>11.7</td>
<td>Cleaning Exist Structural Steel (Lead Abatement Required)</td>
</tr>
<tr>
<td>11.8</td>
<td>Painting Exist Structural Steel (Paint System B’)</td>
</tr>
<tr>
<td>11.9</td>
<td>Painting Exist Structural Steel (Paint System K’)</td>
</tr>
<tr>
<td>11.10</td>
<td>Structural Steel Repair / Modifications &amp; Bearing Replacement</td>
</tr>
<tr>
<td>Milestone</td>
<td>Dollar Amount</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td>11.11</td>
<td>Bridge Drainage System Replacement Incl. Scuppers &amp; Downspouts</td>
</tr>
<tr>
<td>11.12</td>
<td>Bridge Mounted Lighting System Replacement</td>
</tr>
<tr>
<td>11.13</td>
<td>Underbridge Lighting System Replacement</td>
</tr>
<tr>
<td>11.14</td>
<td>Pigeon Deterrent System</td>
</tr>
<tr>
<td>11.15</td>
<td>Miscellaneous Approach Repair/Restoration Work</td>
</tr>
<tr>
<td>12.1</td>
<td>Construction of Bus Station North (BIN 2269740)</td>
</tr>
<tr>
<td>12.2</td>
<td>Maintenance and Protection of Traffic</td>
</tr>
<tr>
<td>12.3</td>
<td>Demolition/Clearing Site/Temporary Shielding</td>
</tr>
<tr>
<td>12.4</td>
<td>Encasement Repair (Columns and Underside of Terminal Ped. Ramps)</td>
</tr>
<tr>
<td>12.5</td>
<td>Concrete Deck, Bus Platform Sidewalk and Traffic Divider Construction Including Expansion Joints</td>
</tr>
<tr>
<td>12.6</td>
<td>Concrete Deck Repair and Waterproofing Membrane (Over Terminal)</td>
</tr>
<tr>
<td>12.7</td>
<td>Lightweight Concrete Overlay Construction</td>
</tr>
<tr>
<td>12.8</td>
<td>Concrete Barrier Construction</td>
</tr>
<tr>
<td>12.9</td>
<td>Bridge Mounted Fencing</td>
</tr>
<tr>
<td>12.10</td>
<td>Containment System</td>
</tr>
<tr>
<td>12.11</td>
<td>Cleaning Existing Structural Steel (Lead Abatement Required)</td>
</tr>
<tr>
<td>12.12</td>
<td>Painting Existing Structural Steel (Paint System B’)</td>
</tr>
<tr>
<td>12.13</td>
<td>Painting Existing Structural Steel (Paint System K’)</td>
</tr>
<tr>
<td>12.14</td>
<td>Structural Steel Repair / Modifications</td>
</tr>
<tr>
<td>12.15</td>
<td>Bridge Drainage System Replacement Including Scuppers, Overhead Pipes and Downspouts</td>
</tr>
<tr>
<td>12.16</td>
<td>Bridge Mounted Lighting System Replacement</td>
</tr>
<tr>
<td>12.17</td>
<td>Underbridge Lighting System Replacement</td>
</tr>
<tr>
<td>13.1</td>
<td>Construction of Bus Station South (BIN 2269750)</td>
</tr>
<tr>
<td>13.2</td>
<td>Maintenance and Protection of Traffic</td>
</tr>
<tr>
<td>13.3</td>
<td>Demolition/Clearing Site/Temporary Shielding</td>
</tr>
<tr>
<td>13.4</td>
<td>Concrete Deck and Bus Platform Sidewalk Construction Including Exp. Joints</td>
</tr>
<tr>
<td>13.5</td>
<td>Concrete Barrier Construction</td>
</tr>
<tr>
<td>13.6</td>
<td>Bridge Mounted Fencing</td>
</tr>
<tr>
<td>13.7</td>
<td>Reconstruction of Bus Canopy Brick Walls with Steel Grating Infill</td>
</tr>
<tr>
<td>13.8</td>
<td>Containment System</td>
</tr>
<tr>
<td>13.9</td>
<td>Cleaning Existing Structural &amp; Bus Canopy Steel (Lead Abatement Required)</td>
</tr>
<tr>
<td></td>
<td>Painting Existing Structural Steel (Paint System B’)</td>
</tr>
<tr>
<td>Milestone</td>
<td>Dollar Amount</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
</tr>
<tr>
<td>13.10</td>
<td>Painting Exist Structural &amp; Bus Canopy Steel (Paint System K')</td>
</tr>
<tr>
<td>13.11</td>
<td>Structural Steel Repair / Modifications</td>
</tr>
<tr>
<td>13.12</td>
<td>Bridge Drainage System Replacement Including Scuppers, Overhead Pipes and Downspouts</td>
</tr>
<tr>
<td>13.13</td>
<td>Bridge Mounted Lighting System Replacement</td>
</tr>
<tr>
<td>13.14</td>
<td>Underbridge Lighting System Replacement</td>
</tr>
<tr>
<td>13.15</td>
<td>Pigeon Deterrent System</td>
</tr>
<tr>
<td></td>
<td><strong>Construction of Bus Exit Ramp – Old Viaduct (BIN 2269790)</strong></td>
</tr>
<tr>
<td>14.1</td>
<td>Maintenance and Protection of Traffic</td>
</tr>
<tr>
<td>14.2</td>
<td>Encasement Removal / Temporary Shielding (for the purposes of inspection)</td>
</tr>
<tr>
<td>14.3</td>
<td>Demolition/Clearing Site / Temporary Shielding (for the purposes of deck reconstruction)</td>
</tr>
<tr>
<td>14.4</td>
<td>Concrete Substructure Repair including Pedestal Reconstruction</td>
</tr>
<tr>
<td>14.5</td>
<td>Concrete Deck, Sidewalks and Approach Slab Construction Including Expansion Joints</td>
</tr>
<tr>
<td>14.6</td>
<td>Concrete Parapet Construction</td>
</tr>
<tr>
<td>14.7</td>
<td>Bridge Mounted Fencing</td>
</tr>
<tr>
<td>14.8</td>
<td>Steel Bridge Railing</td>
</tr>
<tr>
<td>14.9</td>
<td>Containment System (Limited Areas)</td>
</tr>
<tr>
<td>14.10</td>
<td>Cleaning Exist Structural Steel (Limited Areas of Lead Abatement Required)</td>
</tr>
<tr>
<td>14.11</td>
<td>Painting Exist Structural Steel (Paint System B')</td>
</tr>
<tr>
<td>14.12</td>
<td>Painting Exist Structural Steel (Paint System K')</td>
</tr>
<tr>
<td>14.13</td>
<td>Bearing Replacement</td>
</tr>
<tr>
<td>14.14</td>
<td>Bridge Drainage System Replacement Including Scuppers, Overhead Pipes and Downspouts</td>
</tr>
<tr>
<td>14.15</td>
<td>Bridge Mounted Lighting System Replacement</td>
</tr>
<tr>
<td>14.16</td>
<td>Underbridge Lighting System Replacement</td>
</tr>
<tr>
<td>14.17</td>
<td>Pigeon Deterrent System</td>
</tr>
<tr>
<td>14.18</td>
<td>Miscellaneous Approach Repair/Restoration Work</td>
</tr>
<tr>
<td></td>
<td><strong>Construction of Pedestrian Breezeway (BIN 2270170)</strong></td>
</tr>
<tr>
<td>15.1</td>
<td>Demolition/Clearing Site / Temporary Shielding Including Removal of Roof (Asbestos Abatement Required) and Stairs to Ramp B</td>
</tr>
<tr>
<td>15.2</td>
<td>Concrete Column Base Repair</td>
</tr>
<tr>
<td>15.3</td>
<td>Concrete Deck Construction including Expansion Joints</td>
</tr>
<tr>
<td>15.4</td>
<td>Containment System</td>
</tr>
<tr>
<td>Milestone</td>
<td>Dollar Amount</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td>15.5</td>
<td>Cleaning Exist Structural Steel (Lead Abatement Required)</td>
</tr>
<tr>
<td>15.6</td>
<td>Painting Exist Structural Steel (Paint System K')</td>
</tr>
<tr>
<td>15.7</td>
<td>Structural Steel Repair Including Modifications to South Fascia Girder Due to Stair Removal</td>
</tr>
<tr>
<td>15.8</td>
<td>Metal Roof Construction</td>
</tr>
<tr>
<td>15.9</td>
<td>Ceiling Mounted Lighting System Replacement</td>
</tr>
<tr>
<td>15.10</td>
<td>Underbridge Lighting System Replacement</td>
</tr>
<tr>
<td>15.11</td>
<td>Pigeon Deterrent System</td>
</tr>
<tr>
<td>16.0</td>
<td>Construction of North Ramp (BIN 2269760)</td>
</tr>
<tr>
<td>16.1</td>
<td>Maintenance and Protection of Traffic</td>
</tr>
<tr>
<td>16.2</td>
<td>Reconstruction of SIRTOA Stadium Station Stairs</td>
</tr>
<tr>
<td>16.3</td>
<td>Clearing Site / Foundation Excavation (Assume Excess Excavation Material to be Classified as Contaminated, Non-Hazardous, Non-Petroleum Industrial Waste for Hauling and Disposal purposes)</td>
</tr>
<tr>
<td>16.4</td>
<td>Hauling and Disposal of Contaminated Excess Excavation Material Classified as Non-Hazardous, Petroleum Contaminated Waste (Unit price based on assumed proposal quantity of 100 tons)</td>
</tr>
<tr>
<td>16.5</td>
<td>Hauling and Disposal of Contaminated Excess Excavation Material Classified as Hazardous Waste (Unit price based on assumed proposal quantity of 25 tons)</td>
</tr>
<tr>
<td>16.6</td>
<td>Bridge Foundations (Including possible dewatering operations)</td>
</tr>
<tr>
<td>16.7</td>
<td>Bridge Substructure including Abutment Modifications (Richmond Terrace)</td>
</tr>
<tr>
<td>16.8</td>
<td>Bridge Superstructure including Deck and Sidewalk</td>
</tr>
<tr>
<td>16.9</td>
<td>Ramp Foundations (Including possible dewatering operations)</td>
</tr>
<tr>
<td>16.10</td>
<td>Ramp Retaining Walls</td>
</tr>
<tr>
<td>16.11</td>
<td>Ramp Fill and Paving</td>
</tr>
<tr>
<td>16.12</td>
<td>Ramp Sidewalks</td>
</tr>
<tr>
<td>16.13</td>
<td>Bridge / Ramp Barrier and Parapet</td>
</tr>
<tr>
<td>16.14</td>
<td>Bridge / Ramp Fencing</td>
</tr>
<tr>
<td>16.15</td>
<td>Bridge / Ramp Drainage System</td>
</tr>
<tr>
<td>16.16</td>
<td>Bridge / Ramp Lighting System</td>
</tr>
<tr>
<td>16.17</td>
<td>Pigeon Deterrent System</td>
</tr>
<tr>
<td>16.18</td>
<td>Approach Tie-In Work at Richmond Terrace</td>
</tr>
<tr>
<td>16.19</td>
<td>Approach Tie-In Work at Waterfront Street</td>
</tr>
<tr>
<td>16.20</td>
<td>Restoration of EDC Parking Lot (Pavement &amp; Stripping)</td>
</tr>
<tr>
<td>16.21</td>
<td>Restoration of EDC Parking Lot Landscaping</td>
</tr>
<tr>
<td>Milestone</td>
<td>Dollar Amount</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td>16.23 Demolition, Disposal and Backfilling of Existing North Ramp Bridge – Substructure / Foundations (Asbestos Abatement Prior to Abutment Demo.)</td>
<td></td>
</tr>
<tr>
<td>16.24 Demolition, Disposal and Backfilling of Existing North Ramp - Retaining Wall / Foundation (Assume Asbestos Abatement Required Prior to Wall Demo.)</td>
<td></td>
</tr>
<tr>
<td>17.0 North Municipal Parking Field</td>
<td></td>
</tr>
<tr>
<td>17.1 Modifications to Existing Lot to Accommodate Relocated Taxi Stand</td>
<td></td>
</tr>
<tr>
<td>17.2 Clearing Site (Includes Milling and Excavation for Base Course)</td>
<td></td>
</tr>
<tr>
<td>17.3 Installation of Rolled Gravel Base (Including Existing Pavement Repair)</td>
<td></td>
</tr>
<tr>
<td>17.4 Installation of Bituminous Concrete Surface Course &amp; Re-striping</td>
<td></td>
</tr>
<tr>
<td>17.5 Security Fencing</td>
<td></td>
</tr>
<tr>
<td>17.6 Site Drainage</td>
<td></td>
</tr>
<tr>
<td>17.7 Site Lighting</td>
<td></td>
</tr>
<tr>
<td>18.0 Bus Canopy Package</td>
<td></td>
</tr>
<tr>
<td>18.1 Bus Canopy - Architectural Work excluding Brick Wall Modifications &amp; Cleaning and Painting Bus Canopy Steel</td>
<td></td>
</tr>
<tr>
<td>18.2 Bus Canopy - Electrical Work including Holding Lights &amp; PA System Upgrade</td>
<td></td>
</tr>
<tr>
<td>18.3 Vestibule - Architectural Work</td>
<td></td>
</tr>
<tr>
<td>18.4 Vestibule - Structural Work</td>
<td></td>
</tr>
<tr>
<td>18.5 Vestibule - Mech./Elect./Plumbing Work</td>
<td></td>
</tr>
<tr>
<td>19.0 Site Drainage</td>
<td></td>
</tr>
<tr>
<td>19.1 Clearing Site / Excavation</td>
<td></td>
</tr>
<tr>
<td>19.2 Replacement / Modifications to Underground Site Drainage Systems (Including tie-in with bridge drainage systems)</td>
<td></td>
</tr>
<tr>
<td>19.3 Backfill and Restoration of Site</td>
<td></td>
</tr>
<tr>
<td>20.0 Public Utilities¹ (Exclusive of site drainage work)</td>
<td></td>
</tr>
<tr>
<td>21.0 Demobilization (Including Site Restoration)</td>
<td></td>
</tr>
<tr>
<td><strong>SUBTOTAL USED FOR PROPOSAL EVALUATION</strong></td>
<td><strong>1690</strong></td>
</tr>
<tr>
<td>Milestone</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>22.0</td>
<td>Allowance for Architectural Enhancements (Bus Canopies and Pedestrian Bridge)</td>
</tr>
<tr>
<td>23.0</td>
<td>Allowance for Flag Repairs</td>
</tr>
<tr>
<td>24.0</td>
<td>Incidental Repairs</td>
</tr>
<tr>
<td>25.0</td>
<td>Incentive (NYC-1943)</td>
</tr>
<tr>
<td>26.0</td>
<td>Allowance for NYCT Disruptions²</td>
</tr>
<tr>
<td>27.0</td>
<td>Allowance for Anti-Icing System³</td>
</tr>
<tr>
<td></td>
<td><strong>ALLOWANCE SUBTOTAL⁴</strong></td>
</tr>
</tbody>
</table>

**TOTAL CONTRACT AMOUNT**

---

**Note:**

1. In the event there is a need for any Private Utility work beyond the limits of the Terminal (i.e. where such utilities are no longer under the ownership of New York City), there must be a separate contract between the Company and the Utility Company as per Section U.

2. This item is to reimburse the Company for demonstrated losses incurred as a direct result of NYC Transit ordered disruptions to the Company’s otherwise scheduled and approved work operations. This will apply to any entity of NYC Transit including but not limited to SIRTOA and Bus Operations.

3. This item is included as a budgetary allowance for future anticipated work related to designing, furnishing and installing an anti-icing system at the St. George Ferry Terminal. The scope of this work will be finalized prior to Notice to Proceed.

4. The value of the Allowance Subtotal shall not be considered in the total for computing DBE subcontracting percentages.
EXHIBIT D
DESIGN DELIVERABLE SUBMISSIONS
## DESIGN DELIVERABLE SUBMISSIONS

<table>
<thead>
<tr>
<th>ITEM</th>
<th><em>CALENDAR DAYS</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EARLIEST</td>
</tr>
<tr>
<td>1.</td>
<td>&quot;Notice to Proceed&quot; Date</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Construction Schedule &amp; MPT Scheme</strong></td>
</tr>
<tr>
<td>2.1</td>
<td>CPM Schedule (Requires monthly updates)</td>
</tr>
<tr>
<td>2.2</td>
<td>Maintenance and Protection of Traffic Plans (All stages of construction including temporary relocation of Taxi Service)</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Traffic Study for Richmond Terrace &amp; Terminal</strong> (Report and Conceptual Plans of Viable Schemes)</td>
</tr>
<tr>
<td>4.</td>
<td><strong>Inspection Reports</strong> (Updating Condition and Work Limits)</td>
</tr>
<tr>
<td>5.</td>
<td><strong>Construction Noise Mitigation Plan</strong></td>
</tr>
<tr>
<td>6.</td>
<td><strong>Old Viaduct - Assessment &amp; Recommendations for Steel Repair</strong></td>
</tr>
<tr>
<td>6.1</td>
<td>Temporary Shielding Plans and Details for Encasement Removal</td>
</tr>
<tr>
<td>6.2</td>
<td>Assessment Report (w/ proposed repair details and cost estimate)</td>
</tr>
<tr>
<td>6.3</td>
<td><strong>Construction Noise Mitigation Plan</strong></td>
</tr>
<tr>
<td>7.</td>
<td><strong>Site Drainage</strong></td>
</tr>
<tr>
<td>7.1</td>
<td>Site Drainage Report (Including video inspection findings, drainage analysis and recommendations – to be reviewed and approved by NYCDOT &amp; NYCDEP)</td>
</tr>
<tr>
<td>7.2</td>
<td>Site Drainage Plans</td>
</tr>
<tr>
<td>7.3</td>
<td>Permit Applications (SPDES, ACOE, DOS, etc. as needed)</td>
</tr>
<tr>
<td>8.</td>
<td><strong>Lead Paint Removal, Disposal &amp; Painting Plans (For Ramps B, C, D, Bus Station N &amp; S, Old Viaduct &amp; Ped Breezeway)</strong></td>
</tr>
<tr>
<td>8.1</td>
<td>Painting Schedule / Staging Details</td>
</tr>
<tr>
<td>8.2</td>
<td>Containment System Plans and Drawings (To be reviewed and approved by NYCDOT &amp; NYCT OSS)</td>
</tr>
<tr>
<td>8.3</td>
<td>Worker / Environmental Protection Plan (To be reviewed and approved by NYCDOT &amp; NYCT OSS)</td>
</tr>
<tr>
<td>8.4</td>
<td>Waste Management Plan (To be reviewed and approved by NYCDOT &amp; NYCT OSS)</td>
</tr>
<tr>
<td>8.5</td>
<td>Recommendation of Finish Paint Color to Art Commission</td>
</tr>
<tr>
<td>9.</td>
<td><strong>Proposed Schemes for Architectural Enhancement of the Bus Canopies and Pedestrian Breezeway</strong></td>
</tr>
<tr>
<td>9.1</td>
<td>Art Commission Submission / Presentation</td>
</tr>
<tr>
<td>ITEM</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>10.</td>
<td>North Ramp Construction</td>
</tr>
<tr>
<td>10.1</td>
<td>30% Plans (Including Foundation Report, Staging and Demo. Scheme (w/Track Shielding Details) and Superstructure Type)</td>
</tr>
<tr>
<td>10.2</td>
<td>Preliminary Plans for EDC Review and Approval</td>
</tr>
<tr>
<td>10.3</td>
<td>Architectural Drawings for Art Commission Review &amp; Approval</td>
</tr>
<tr>
<td>10.4</td>
<td>90% Plans</td>
</tr>
<tr>
<td>10.5</td>
<td>Final Plans, Specifications and Calculations</td>
</tr>
<tr>
<td>11.</td>
<td>Ramp A Construction</td>
</tr>
<tr>
<td>11.1</td>
<td>30% Plans (Including Staging and Demolition Scheme (w/Track Shielding Details), and Superstructure Type)</td>
</tr>
<tr>
<td>11.2</td>
<td>90% Plans</td>
</tr>
<tr>
<td>11.3</td>
<td>Final Plans, Specifications and Calculations</td>
</tr>
<tr>
<td>12.</td>
<td>Ramps B, C and D Construction</td>
</tr>
<tr>
<td>12.1</td>
<td>Deck Replacement Details (Including Demo/Temp. Shielding)</td>
</tr>
<tr>
<td>12.2</td>
<td>Steel Repair Details (Including Bearing Replacement)</td>
</tr>
<tr>
<td>12.3</td>
<td>Concrete Repair Details (Including Pedestal Reconstruction)</td>
</tr>
<tr>
<td>12.4</td>
<td>Bridge Drainage Details</td>
</tr>
<tr>
<td>12.5</td>
<td>Bridge Lighting Details (On and Underdeck)</td>
</tr>
<tr>
<td>13.</td>
<td>Bus Station North &amp; South Construction</td>
</tr>
<tr>
<td>13.1</td>
<td>Deck Replacement Details (Including Demo/Temp. Shielding)</td>
</tr>
<tr>
<td>13.2</td>
<td>Steel Repair Details</td>
</tr>
<tr>
<td>13.3</td>
<td>Details of Proposed Architectural Enhancement (after Art Commission review and approval)</td>
</tr>
<tr>
<td>13.4</td>
<td>Brick Canopy Wall Reconstruction Details</td>
</tr>
<tr>
<td>13.5</td>
<td>Bridge Drainage Details</td>
</tr>
<tr>
<td>13.6</td>
<td>Bridge Lighting Details (On and Underdeck)</td>
</tr>
<tr>
<td>14.</td>
<td>Bus Exit Ramp (Old Viaduct) Construction</td>
</tr>
<tr>
<td>14.1</td>
<td>Deck Replacement Details (Including Demo / Temp Shielding)</td>
</tr>
<tr>
<td>14.2</td>
<td>Steel Repair Details (Final Plans – Upon Approval of Assessment &amp; Recommendation Report)</td>
</tr>
<tr>
<td>14.3</td>
<td>Concrete Repair Details (Including Pedestal Reconstruction)</td>
</tr>
<tr>
<td>14.4</td>
<td>Bridge Drainage Details</td>
</tr>
<tr>
<td>14.5</td>
<td>Bridge Lighting Details (On and Underdeck)</td>
</tr>
<tr>
<td>15.</td>
<td>Pedestrian Breezeway</td>
</tr>
<tr>
<td>15.1</td>
<td>Deck Replacement Details (Including Demo / Temp Shielding)</td>
</tr>
<tr>
<td>15.2</td>
<td>Structural Steel Details (Including Removal of Staircase to Ramp B and Modification to South Fascia)</td>
</tr>
<tr>
<td>ITEM</td>
<td>EARLIEST</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>15.3</td>
<td>Roof Replacement Details (Including Demo / Temp Shielding / Asbestos Abatement)</td>
</tr>
<tr>
<td>15.4</td>
<td>Details of Proposed Architectural Enhancements (after Art Commission review and approval)</td>
</tr>
<tr>
<td>15.5</td>
<td>Bridge Lighting Details (On and Underdeck)</td>
</tr>
<tr>
<td>16.</td>
<td>North Municipal Parking Lot</td>
</tr>
<tr>
<td>16.1</td>
<td>Temporary Taxi Relocation Plans (including signing details)</td>
</tr>
<tr>
<td>16.2</td>
<td>Re-surfacing and Striping Plans (Including proposed staging of work and fencing details)</td>
</tr>
<tr>
<td>16.3</td>
<td>Site Lighting and Drainage Plans and Details</td>
</tr>
<tr>
<td>17.</td>
<td>Bus Canopy Package Work</td>
</tr>
<tr>
<td>17.1</td>
<td>Bus Canopy Architectural Work – Roof Repair &amp; Signing Details</td>
</tr>
<tr>
<td>17.2</td>
<td>Bus Canopy Electrical Work incl. Holding Lights &amp; PA System Upgrade</td>
</tr>
<tr>
<td>17.3</td>
<td>Automatic Door Plans (including architectural and electrical work)</td>
</tr>
<tr>
<td>17.4</td>
<td>Vestibule Plans (including architectural, structural and Mech./Elect./Plumbing work)</td>
</tr>
<tr>
<td>17.5</td>
<td>Structural Details for Installation of Lifting Hook at Slip 3</td>
</tr>
<tr>
<td>18.</td>
<td>Pigeon Deterrent System</td>
</tr>
<tr>
<td>18.1</td>
<td>Location plans and attachment details</td>
</tr>
<tr>
<td>19.</td>
<td>Specifications (Not previously submitted)</td>
</tr>
<tr>
<td>20.</td>
<td>Design Calculations (Not previously submitted)</td>
</tr>
<tr>
<td>21.</td>
<td>As-Built Drawings (Once construction is complete)</td>
</tr>
</tbody>
</table>

* Numbers are to indicate the earliest submission and the latest submission. Turn-around times are not included in this schedule.

Design drawings shall be of sufficient quantity and quality so that the Company is able to prepare shop drawings from them.
EXHIBIT E
SCOPE OF WORK
SCOPE OF WORK
Rehabilitation of the Ramp Structures at the St. George, Staten Island Ferry Terminal

CONTRACT LOCATION:
This contract involves rehabilitation and reconstruction work on eight vehicular ramps and one pedestrian bridge located at the St. George, Staten Island Ferry Terminal in Staten Island, New York.

BRIDGE/SITE DESCRIPTIONS:
The eight vehicular ramp structures consist of 73 spans that provide access to the Staten Island Ferry Terminal for pedestrians, private vehicles, taxis, and New York City Transit buses. The ramps span over the Staten Island Railway, terminal buildings, and terminal parking. Two of the structures serve as a bus station as well as providing a roof over the rail station below. Limited parking is provided on several of the ramps. The North Ramp provides access to the North Municipal Parking Field and the Richmond County Bank Stadium and stadium parking lot, which provides supplemental parking to the Ferry Terminal. The five span pedestrian bridge provides access between the main Ferry Terminal building and the 69th Street Terminal building as well as access to the Bus Entrance Ramp (Ramp B) above and the Commuter Pick-Up and Drop-Off Area below.

Six of the vehicular ramp bridges and one pedestrian bridge were constructed in 1948. The exact age of the Bus Exit Ramp (Old Viaduct) and Ramp A is unknown but presumably circa 1935 and 1955 respectively. The decks are reinforced concrete with, in most cases, asphalt overlay supported on steel superstructures with both steel and concrete substructures. In the case of the Bus Exit Ramp (Old Viaduct) the steel super and substructure are concrete encased and for Ramp A the superstructure is believed to be prestressed concrete beams.
EXISTING CONDITIONS:

All of the structures, to varying degrees, show signs of deterioration. The last major structural work on these bridges was a deck replacement project in 1985 that addressed only five of the nine bridges in this contract.

The decks and asphalt overlays exhibit considerable deterioration and numerous patches. Many of the deck joints are damaged with torn, missing, or dislodged joint sealer material causing stormwater to leak onto the rail station and parking areas below. The bridge drainage system is not functioning due to an accumulation of debris and sediment in the scuppers and downspouts as well as hardened concrete in the underground pipes. The original lead based paint system is failing in many locations causing areas of moderate to severe deterioration in the steel superstructure framing. Yellow flag conditions including cracked connection plates and undermined bearings are present on several of the bridges. Safety flags have been issued in the past for loose concrete encasement and spalled areas on the underside of bridge decks. Safety features such as bridge railings and fencing is substandard. The underbridge lighting units are missing or not functioning and there is a pervasive pigeon roosting problem throughout the site.

In the case of the severely deteriorated and load posted North Ramp, traffic congestion is a major problem due to the skewed intersection with Richmond Terrace and Wall Street. The severe skew makes turning left from the North Ramp onto Richmond Terrace very difficult. This is particularly problematic during the PM peak where this is the major movement. Additionally, cars are typically illegally parked along both sides of the ramp which further hinders two-way traffic flow.
PROJECT OBJECTIVES:
The project objective is to rehabilitate and/or replace these nine structures in order to extend their useful service life and to maintain safe and efficient access to the St. George Staten Island Ferry Terminal.

The following key design elements must be incorporated into the project:

- Arrest the deterioration of the project structures and rehabilitate/replace as necessary in order to extend their useful life by 50 years.
- Replacement of existing concrete deck slab in such a manner as to ensure a good quality decks with a minimum 30 year design life.
- High quality and well detailed expansion joint systems that can perform their intended function with relatively little maintenance for a minimum of 25 years.
- Rehabilitation of structural steel and concrete elements such that at a minimum all existing yellow and safety flagged conditions are eliminated.
- Removal of all exposed lead based paint on the project bridges.
- Working stormwater drainage system from bridge deck to outfall.
- Upgrading of underdeck lighting system to sufficiently light SIRTOA’s ROW.
- Elimination of the pigeon roosting problem on the project bridges spanning over pedestrian walkways, parking lots, station platforms and train storage areas.
- Reconstruction of the existing load restricted North Ramp on a more efficient alignment to alleviate traffic congestion at the intersection of Richmond Terrace and Wall Street.

The following added value features are to be investigated and implemented upon approval:

- Improving vehicular and pedestrian traffic flow along Richmond Terrace in the immediate vicinity of the St. George Ferry Terminal.
- Enhancing the overall aesthetics of the project site, in particular the bus canopies and pedestrian breezeway, in a manner and style consistent with the recently reconstructed terminal building.

The following key construction issues must be addressed throughout construction:

- Maintain the existing level of ferry, rail and bus service at all times throughout the duration of the project.
- Maintain sufficient access for private vehicles, taxis and pedestrians to the Ferry Terminal and along Richmond Terrace at all times throughout the duration of the project.
- Stage the work in such a manner as to minimize the loss of on-site parking throughout the duration of the project.
- Perform the work in such a manner as minimize the amount of noise and dust created during construction.
- Coordinate effectively with NYCT/SIRTOA to expedite operations and minimize Force Account expenses.
VALUE ENGINEERING

A Value Engineering Workshop will be conducted at the expense of the City sometime after contract award but prior to Notice to Proceed. The Company will be expected to attend the workshop but there will be no separate payment for this, the cost of attending is considered incidental to project and shall be deemed included in the price bid.

The following four sections outline the proposed scope of work.

SECTION 1 – DESCRIPTION OF WORK ITEMS

This section contains a narrative description of the major work items.

SECTION 2 – PRELIMINARY DRAWINGS

The section contains preliminary drawings for each of the project bridges and the North Municipal Parking Field based on the scope of work outlined in this Exhibit. In addition two plan sheets from previous contracts have been included which highlight the existing underground drainage systems. These drawings are intended to assist the Proposers in preparing their bids but should not be considered as final. It is fully expected that details, materials, quantities, etc. will be revised as final designs are developed.

The AutoCAD files for these Preliminary Drawings are provided to all Proposers as a separate attachment to this RFP. They are available on CD and can be picked up with the RFP or downloaded from NYCDOT’s website. Additionally AutoCAD files will be provided for the Deck Coring Plans (Section 4), Survey Plans (Section10) and Utility Plans (Section 11) from Exhibit A in Book 2: Volume 1.

SECTION 3 – BUS CANOPY PACKAGE (PLANS)

This Section contains contract plans that were prepared by Hellmuth, Obata and Kassabaum (HOK) for NYCEDC and NYCDOT to make additional improvements and modifications to the St. George Station. This work includes additional items deemed necessary to complete the recent Design/Build Terminal Reconstruction Project. It includes architectural improvements to the bus canopies along with additional signing and lighting and modifications to the South and West Entrance vestibules including mechanical, electrical and plumbing work.

Plans for this work were developed by the Terminal Reconstruction Design/Build team of HOK and Skanska USA Building. Construction was scheduled to begin in the early 2007. However, since the bus canopy portion of the work in the HOK contract would overlap with scope already envisioned for this contract it was agreed upon by all parties to perform this work with some modifications and additions under NYCDOT’s Ramp Rehabilitation Design/Build Contract. The modifications / additions to the scope beyond what is shown in the following plan set are discussed in Section 1 of this Exhibit.

SECTION 4 – PRELIMINARY QUANTITIES

The section contains preliminary quantity tables for each of the project bridges along with major site work anticipated based on the scope of work outlined in this Exhibit. This information is intended to assist the Proposers in preparing their bids and by no means should be considered all inclusive and/or final. Proposers are responsible for preparing their own quantity take-offs.
However for the purposes of bidding repair items, the Company shall base their estimate of rehabilitated / repair items (e.g. structural steel repairs, concrete repair, re-pointing of masonry, etc.) on the quantities provided in the following quantity tables. This applies only to rehabilitation/repair items; for all other occasions, the Company is responsible for developing their own quantities based on their proposed replacement scheme.

The following is a list of the Quantity Tables provided in this section:

Summary
Ramp A (BIN 227010)
Ramp B (BIN 2269770)
Ramp C (BIN 2269780)
Ramp D (BIN 2269730)
Bus Station North (BIN 2269740)
Bus Station South (BIN 2269750)
Old Viaduct (BIN 2269790)
Pedestrian Breezeway (BIN 2270170)
North Ramp (BIN 2269760)
North Municipal Parking Field
Bus Canopy Package
Site Drainage (Existing)
SECTION 1

DESCRIPTION OF WORK ITEMS
DESCRIPTION OF WORK ITEMS

The following is a description of the major work items in the general order of how they appear in the Price Proposal Sheet (Book 1), Progress Payment Schedule (Exhibit C – Book 2: Volume 2) and the list of Design Deliverable Submissions (Exhibit D - Book 2: Volume 2).

Community Outreach:

The Company shall have a dedicated Community Liaison person to provide services as outlined in the Agreement Section of Book 1. The Community Liaison is to identify, contact and keep informed on a regular basis all affected entities including, but not limited to the Borough President’s Office, the Community Board, all affected City agencies, neighborhood and civil organizations, community services, emergency services (including EMS and the Police and Fire Departments) as well as the St. George Terminal users. This effort is to include but is not limited to preparing for and attending meetings, making presentations, preparing and distributing brochures and newsletters, establishing and maintaining a dedicated hot-line to respond to calls within 24 hours, and preparing updates for the NYCDOT website page (see Article 5 in Exhibit H, Book 2 for details) to inform the public of construction progress.

Prior to the start of construction the Community Liaison is to prepare a brochure outlining the project scope and schedule, highlighting key stages of MPT and the need to temporarily relocate parking and taxi service. The brochure should also include information about the dedicated hotline and NYCDOT website where updates are to be posted regularly. Once the brochure has been approved by NYCDOT, the Community Liaison should print a minimum of 20,000 copies for distribution at the Terminal.

The Community Liaison will also be responsible for performing the community notification work required for abrasive blasting projects as per NYCDOT’s Specification 832 for Lead Paint Removal. The purpose is to advise the public about the lead-paint removal operations and the plans for maintenance and protection of traffic that will be undertaken to facilitate the work. This task shall include, but is not limited to providing (preparing and publishing) and distributing pamphlets and color tri-fold brochures describing the operations that will be conducted, and attending meetings with affected community members.

The Company will be deemed to have taken all the above into consideration and all associated costs will be deemed incorporated in its bid price.

Traffic Study – Richmond Terrace/Terminal

The Company shall perform a detailed traffic study of Richmond Terrace from its intersection with Victory Boulevard and Bay Avenue to the southeast and Jersey Street to the northwest (linear distance of 1.3 miles). The objective of the study is to identify potential improvements to the flow of vehicular and pedestrian traffic along Richmond Terrace in the immediate vicinity of the St. George Ferry Terminal.

Potential improvements can consider but are not limited to modifications to existing traffic signalization, re-direction of collector road traffic, roadway widening, dedicated turning lanes, sidewalk extensions, elimination /modification to on-street parking and median reconfigurations.
This study should also consider the latest findings from the Staten Island – Brooklyn Mobility Enhancement Project in which a Transit Signal Priority (TSP) system was implemented on 300 NYCT buses traveling through a 2.3 mile segment of Staten Island, between Bay Street and Forest Avenue and Bay Street from Victory Boulevard to the St. George Ferry Terminal. All the information available at the time of RFP preparation for this TSP project has been included in Section 9 – Supporting Traffic Data of Exhibit A in Book 2: Volume 1. Contact information for project updates is included in Exhibit B – Technical Specifications in Book 2: Volume 2.

Upon completion of this traffic study, the Company shall prepare a report outlining their findings and various potential improvement schemes along with estimated design and construction cost to implement each scheme. The Company will be required to produce sufficiently detailed plans of those schemes considered most viable for review by various divisions within NYCDOT, including but not limited to the Staten Island Borough Office, Highway Design and Construction, the Bureau of Traffic Signals and Lighting and the Office of Construction Mitigation and Coordination. In addition, viable schemes must be presented for review to the MTA - Surface Operations, the Department of City Planning Borough Office and other concerned agencies.

If in the event a recommended scheme is determined to be viable and worthy of implementation within the Design-Build Contract, the Company will be asked to submit a price proposal for the final design, construction and construction support services associated with implementing the recommended scheme. The fee to perform this additional work will be negotiated as an extra to this contract.

**DESIGN SERVICES**

The Company shall perform all the necessary field investigation, analysis, design and plan preparation to fully detail the work to be constructed under this Contract. All work shall conform to the design criteria stipulated in Exhibit B – Technical Specifications in Book 2: Volume 2 and the administrative requirements detailed in Section 1.03 Article 10 – Design Services in Book 1. Submissions shall be made in accordance with the Design Deliverables listed in Exhibit D (Book 2: Volume 2).

**Bridge / Site Inspections**

The Company shall perform an in-depth inspection of each of the nine bridges in the contract to update the findings provided in Section 3 of Exhibit A. This inspection should be used to identify and quantify the specific limits of work to be constructed by the Company as well as to identify potential means and methods of construction. The Company shall prepare and submit to NYCDOT a report summarizing their inspection findings and recommendations for limits of work. This report shall clearly identify any significant deviations in the Company’s recommended work limits from that outlined in this RFP. Design efforts on those disputed areas shall not advance until written authorization has been received from NYCDOT as to the approved limits and scope of work.

**Bridge / Site Surveys**

A field survey shall be performed of each of the bridges and their approaches as necessary to establish existing conditions and controls for design and construction. This will be necessary to determine profile and cross slopes for proper tie-ins with approaches for deck reconstruction work.
Additionally the Company shall conduct a survey of all columns, beams, utilities, etc over and adjacent to SIRTOA tracks for the purposes of establishing clearance restrictions to the tracks and platforms at the St. George Station and Interlocking. For information on clearance limits to tracks and platforms see Section 2 of Exhibit G in Book 2: Volume 2.

**Old Viaduct – Assessment and Recommendations for Steel Repair**
The Company shall perform an in-depth inspection of the structural steel framing on the Bus Exit Ramp – Old Viaduct (BIN 2268790) once all concrete encasement has been removed. A report shall be prepared and submitted to NYCDOT summarizing the inspection findings and repair recommendations. This report shall also contain a detailed construction cost estimate for the recommended repairs. Actual design and construction of structural steel repair work is not to commence until written authorization is given by NYCDOT. The cost for final design, construction support services and construction of approved repairs will be paid for under the Incidental Repair item of this Design/Build Contract.

Note that site activities for the sole purpose of encasement removal and inspection of the exposed steel on the Old Viaduct will not be considered to constitute the start of the Construction Duration. However before commencing with these activities the Company must comply with the new Construction Noise Mitigation Rule promulgated by NYC Department of Environmental Protection. See Article 5.3 in Book 1 for the requirements of this new Noise Rule.

**Site Drainage – Design Report and Plans**
The Company shall perform a comprehensive investigation of the existing drainage system at the St. George Terminal for the purposes of developing a design/construction strategy to ensure unrestricted flow from the various collection points on the project bridges and the North Municipal Parking Field to their final discharge locations in the Upper New York Bay. As part of this investigation, the Company shall perform a video inspection of the existing system from each bridge to its respective outfall location to determine the condition and extent of necessary repair and/or replacement. The Company shall prepare a report summarizing its findings and proposed repair/replacement strategy along with supporting drainage calculations. This report is to be submitted to NYCDOT and NYCDEP for their review and approval of the proposed strategy. Should the approved strategy be less than complete system replacement it is expected that the City will receive a negotiated credit for the difference between the bid price for complete replacement versus the work actually performed.

The Company will also be responsible for securing all necessary permits to perform this work. Permit applications should be submitted in a timely fashion to allow adequate agency review time so as to not jeopardize the overall project schedule. The cost of permit fees shall be paid for under the item ‘Permits, Bonds, Insurance and Upfront Coordination (NTE 6%)’.

**Maintenance and Protection of Traffic / Construction Staging Plans**
The Company will be responsible for developing a detailed construction staging plan that adheres to the Maintenance and Protection of Traffic stipulations given in Exhibit F of Book 2: Volume 2 without compromising the stated Project Objectives and which satisfies the Construction Duration requirements given in Schedule A of Book 1.
Proposers may consider strategies such as temporary ramps, widening of existing structures, detouring or reversing traffic flow, etc. in the interest of improving the quality of construction and/or reducing the construction duration and impact to terminal users. The cost for investigating, designing, detailing and securing approval for such solutions will be paid for under this item.

The Company shall prepare and submit Maintenance and Protection of Traffic (MPT) plans to NYCDOT Office of Construction Mitigation and Coordination (OCMC) for review and approval. MPT Plans shall also be submitted for approval to NYCDOT Traffic Division, Attn: Gerard Soffian; NYCDOT Highway Design and Construction, Attn: Sam Barkho and to NYCDOT Passenger Transport Division, Attn: Capt. James DeSimone. The Company’s proposed method of MPT and construction staging must also be reviewed and approved by New York City Transit Surface Operations prior to commencing any work on the bus ramps. The Company will also be required to make presentation to the Community Board 1, as necessary.

Additionally, should the proposed MPT scheme require additional construction activities over/on SIRTOA’s ROW beyond that specifically outlined in this RFP, it will be the Company’s responsibility to submit plans and secure approval from MTA-NYCT-Outside Projects and SIRTOA. Proposers should also note that additional work over railroad property may increase the amount of diversion and flaggers required beyond that originally estimated and shown in the Schedule of Authority Supplied Services in Section 1 of Exhibit G – Railroad Requirements of Book 2: Volume 2. Adjustments to the Force Account Agreement between NYCDOT and NYC Transit will be considered provided it can be shown that the proposed scheme would result in such benefits as either better quality construction, a meaningful reduction in the construction duration and/or significantly less impact on the terminal users.

**Lead Paint Removal, Disposal & Painting Plans**

The Company is responsible for preparing and submitting all the necessary documentation, certification, plans, calculations, permit applications, schedules etc. to perform the lead paint removal, disposal and painting work. This includes but is not limited to Containment System Plans and Drawings for each bridge, a project specific Worker/Environmental Protection Plan and a project specific Waste Management Plan as well as a detailed Painting Schedule with Staging Details to show how the work is to be phased to satisfy the time constraint of the Construction Duration.

For a comprehensive list of NYCDOT submittal requirements for lead paint removal and worker/environmental protection and waste handling see Appendix A of Specification Section 832 in Section 4 of Exhibit I – Book 2: Volume 2. For lead paint removal work over / on SIRTOA’s ROW, there are additional NYCT submittal requirements for environmental protection and waste handling which are summarized in Section 3 of Exhibit-I of Book 2: Volume 2.

The Company will also be responsible for testing the Old Viaduct for lead paint once the encasement has been removed and making finish paint color recommendations to the Art Commission.

All submittals shall be as comprehensive as required and made in a timely fashion to allow adequate agency review time and minimize the need for re-submittals so as to not jeopardize the overall project schedule.
Architectural Enhancements (Bus Canopies & Pedestrian Bridge)
An added value feature of this project is to improve the overall aesthetics of the project site. Two areas in particular where NYCDOT is seeking recommendations for architectural enhancements are the bus canopies on Bus Station North and South (BIN 2269740 & 50) and the Pedestrian Breezeway (BIN 2270170). The intent is to improve the appearance of these structures in a manner and style consistent with the recently reconstructed terminal building.

Proposers shall include in their bids the cost to investigate and prepare conceptual plans to sufficiently illustrate their proposed enhancement strategies. Additionally these strategies will have to be presented to several agencies for their input and approval, including but not limited to the NYCDOT Passenger Transport Division, NYCT – Surface Operations, the NYC Art Commission and the Borough President’s Office. The Company will then be asked to prepare a cost proposal for final design, construction support services and construction of the approved strategies. NYCDOT has set aside a $1,000,000 allowance to pay for Architectural Enhancements.

Ramp A
The Company shall be responsible for performing all the necessary design tasks to construct the work listed under CONSTRUCTION ACTIVITIES for this bridge. Note that the superstructure type shown for this bridge in the preliminary drawings (See Section 2 of this Exhibit) is for illustrative purposes only.

Ramp Rehabilitation (All bridges except Ramp A and the North Ramp)
The Company shall be responsible for performing all the necessary design tasks to construct the work listed under CONSTRUCTION ACTIVITIES for these bridges. Note that the work listed for the bus canopies of Bus Station North and South and the Pedestrian Breezeway should be considered a minimum. Additional design work relative to developing conceptual strategies for architectural enhancement of these structures would be paid for under the separate design service item - Architectural Enhancements.

North Ramp
The Company shall be responsible for performing all the necessary design tasks to perform the work listed under CONSTRUCTION ACTIVITIES for this bridge. Note that the superstructure type shown for this bridge in the preliminary drawings (See Section 2 of this Exhibit) is for illustrative purposes only.

Proposers are advised to review the Geotechnical and Environmental Sampling and Testing Program (North Ramp) in Section 5 of Exhibit A in Book 2: Volume 1 for soil and groundwater conditions at the site. If Proposers deem the information furnished in this report to be insufficient for design purposes then the cost to perform supplemental sampling and testing should be included in this item.

The Company will need to prepare and present preliminary plans showing the proposed North Ramp and tie-ins with both approaches as well as the proposed final configuration of the stadium parking lot to NYC EDC for their review and approval. The Company’s design shall look to minimize the number of total spaces lost to relocation of the North Ramp.
The Company will need to prepare and present plans, elevations and details of any significant architectural elements such as bridge fencing to the Art Commission for their review and approval.

**North Municipal Parking Field**
The Company shall be responsible for performing all the necessary design tasks to construct the work listed under CONSTRUCTION ACTIVITIES for this item.

Proposed staging of work and layout of parking spaces is to be coordinated with NYCDOT-Parking Bureau. See Exhibit B – Technical Specification in Book 2: Volume 2 for agency contact information.

**Bus Canopy Package**
The Company shall be responsible for performing all the necessary design tasks to construct the work shown in the Bus Canopy Package plans in Section 3 of this Exhibit and listed under the CONSTRUCTION ACTIVITIES for this item. Proposers shall assume that additional work will be needed to ensure that all work shown in the plan set is accurate and complete. Additionally, the Company will need to coordinate with NYCT – Surface Operations regarding their requirements for replacing the Holding Lights in each bus lane as well as replacing the existing Public Address System at the Bus Station.

**CONSTRUCTION SUPPORT SERVICES:**
The Company shall perform the necessary construction support services in a timely fashion throughout the duration of the Contract in order to maintain the overall construction schedule.

For a more detailed description of required services under this item see Article 11 – Construction Support Services in Section 1.03 of Book 1 – Administrative Requirements.

**CONSTRUCTION ACTIVITIES:**
The proposed construction work for the project is broken down by bridge and major site elements. For preliminary drawings of the proposed work see Section 12 of Exhibit A. This Section also contains a preliminary estimate of quantities to assist the Proposers in preparing their bids but should not be considered as final. It is fully expected that details, material, quantities, etc. will be revised as final designs are developed.

Ramp A – Borough Place (BIN 2270180)
- Installation of temporary shielding over SIRTOA tracks for full limit of bridge.
- Temporary relocation of utilities attached to existing north fascia beam
- Demolition of existing superstructure including bearings, prestressed concrete beams, deck, parapet, sidewalks and approach slabs.
- Repair of concrete abutments and reconstruction of concrete pedestals.
- Construction of new superstructure including bearings, beams, concrete deck, north fascia barrier, fencing and plaza sidewalk.
- Miscellaneous approach work including construction of approach slab and concrete barrier on east approach and restoration of asphalt pavers on west approach and sidewalk along south approach as needed to facilitate bridge reconstruction.
RAMP B – Bus Entrance Ramp (BIN 2269770)

- Installation of temporary shielding over SIRTOA ROW and parking lot for the full limits of the bridge.
- Demolition of existing concrete deck and sidewalk including removal of steel barriers, bridge mounted lights and drainage system.
- Repair of concrete abutment and reconstruction of concrete pedestals.
- Installation of shear connectors on all girders, stringers and pier caps.
- Construction of concrete deck and sidewalk on south fascia.
- Construction of concrete barrier on north fascia with straight fencing on top and concrete parapet with curved-top fencing on south fascia.
- Installation of new expansion joints with supplemental trough systems.
- Replacement of fascia connection angles at fixed-fixed pier caps.
- Refurbishment of sliding stringer connections at expansion piers.
- Replacement of slotted fascia connection angles at expansion – fixed pier caps.
- Replacement of steel bearings at west abutment.
- Installation and operation of containment system.
- Cleaning (100% lead abatement) and painting of existing structural steel.
- Installation of new drainage system including all catch basins, downspouts and tie-ins to new underground drainage system. (New bridge drainage system is to carry stormwater overhead when over SIRTOA ROW.)
- Installation of new bridge mounted light standards.
- Installation of new under bridge lighting units.
- Re-pointing of masonry wall on west approach.
- Installation of pigeon deterrent system over pedestrian / vehicular areas.
- Removal, storage and re-installation of canopy structure on sidewalk.

RAMP C – Commuter and Employee Entrance (BIN 2269780)

- Installation of temporary shielding over SIRTOA ROW for the full limits of the bridge.
- Demolition of existing concrete deck and sidewalk including removal of steel barriers, bridge mounted lights and drainage system.
- Repair of concrete abutments and reconstruction of concrete pedestals.
- Construction of concrete deck and sidewalk on south fascia and replacement of existing shear connectors if and where damaged during demolition of existing deck.
- Construction of concrete barrier on north fascia with straight fencing on top and concrete parapet with curved-top fencing on south fascia.
- Installation of new expansion joints with supplemental trough systems.
- Replacement of fascia connection angles at fixed-fixed pier caps.
- Replacement of steel bearings on both abutments.
- Installation and operation of containment system.
- Cleaning (100% lead abatement) and painting of existing structural steel.
- Installation of new drainage system including all catch basins, downspouts and tie-ins to new underground drainage system. (New bridge drainage system is to carry stormwater overhead when over SIRTOA ROW.)
- Installation of new bridge mounted light standards.
- Installation of new under bridge lighting units.
NYCDOT DIVISION OF BRIDGES:  
Rehabilitation of SI Ferry Ramps

- Miscellaneous approach work including repair of concrete sidewalks and re-pointing of masonry wall.

**RAMP D – Commuter and Employee Exit Ramp – (BIN 2269730)**

- Installation of temporary shielding over SIRTOA ROW and parking lot for the full limits of the bridge
- Demolition of existing concrete deck and sidewalk including removal of bridge mounted lights and drainage system and clearing of debris from west abutment bridge seat.*
- Repair of concrete abutments and reconstruction of concrete pedestals.
- Construction of concrete deck and sidewalks on south and north fascia and replacement of existing shear connectors if and where damaged during demolition of existing deck.
- Installation of girder-mounted curved-top fencing on both fascias.
- Installation of new expansion joints with supplemental trough systems.
- Replacement of fascia connection angles at fixed-fixed pier caps.
- Refurbishment of sliding stringer connections at expansion piers.
- Replacement of slotted fascia connection angles at expansion – fixed pier caps.
- Replacement of deteriorated diaphragm members.
- Supplemental plating of deteriorated members.
- Replacement of fascia girder bottom flange angles.
- Replacement of steel bearings at both abutments.
- Installation and operation of containment system.
- Cleaning (100% lead abatement) and painting of existing structural steel*. 
- Installation of new drainage system including all catch basins, downspouts and tie-ins to new underground drainage system. (New bridge drainage system is to carry stormwater overhead when over SIRTOA ROW.)
- Installation of new bridge mounted light standards.
- Installation of new underdeck lighting units.
- Re-pointing of masonry wall on both approaches.
- Installation of pigeon deterrent system over pedestrian / vehicular area.

* Prior to starting concrete demolition and/or abrasive blasting work on this bridge the Company shall furnish and install a temporary break room trailer for SIRTOA forces. Company is to coordinate with SIRTOA for location of temporary trailer.

**BUS STATION NORTH – (BIN 2269740)**

- Modifications to the northeast corner of the North Municipal Parking Field to provide an alternate location for taxi pick-up / drop-off service. (This work must be done prior to closing any Bus Ramp Lanes and must be maintained until all Bus Ramp Lanes are complete and open to traffic.)
- Installation of temporary shielding over SIRTOA tracks/station and parking lot area for the full limits of the bridge exclusive of the portion over the Terminal Building and the new pedestrian plaza area to the north.
- Demolition of existing concrete deck (single slab) adjacent to Ramp B (BIN 2269770) and in travel lane portion of Bus Ramp A**.
- Demolition of existing lightweight overlay and concrete deck in travel lane portions of Bus Ramp B, C, D and Taxi Ramp (limited to areas of original deck over SIR station and parking lot).
- Removal of bituminous concrete overlay and lightweight concrete overlay including bus platform sidewalks and traffic dividers. (Underlying structural slab is to remain over Terminal Building area. See Section 2 – Preliminary Plans in this Exhibit for limits of slab removal.)
- Removal of steel bridge barrier, bridge mounted lights and drainage system.
- Construct concrete deck (single slab) adjacent to Ramp B (BIN 2269770) and in travel lane portion of Bus Ramp A.
- Construct concrete deck (double slab area) in travel lane portions of Bus Ramp B, C, D and Taxi Ramp (limited to areas over SIR station and parking lot).
- Repair of existing concrete structural slab as needed over terminal building and installation of waterproofing membrane over full limits of double slab area.
- Installation of lightweight concrete overlay slab including traffic dividers and bus platform sidewalks.
- Installation of new expansion joints with supplemental trough systems.
- Construction of concrete barrier and straight fencing along north fascia (Bus Ramp A).
- Replacement of deteriorated diaphragm members.
- Installation and operation of containment system (full limits of bridge).
- Cleaning (100% lead removal) and painting of existing exposed structural steel. Removal of encasement and painting of beams recently installed under Terminal Reconstruction project (located in the northeast corner of the station) is not part of the project scope.
- Column encasement repair where needed.
- Replacement of existing drainage system including all catch basins, downspouts and tie-ins to new underground drainage system. (New bridge drainage system is to carry stormwater overhead when over SIRTOA ROW.)
- Installation of new bridge mounted light standards.
- Installation of new underdeck lighting units.
- Installation of pigeon deterrent system over pedestrian / vehicular area / SIR Station Platforms.

** The Company shall furnish and install (or relocate existing) NYCT - Surface Operation’s Breakroom Trailer to facilitate deck replacement on Bus Ramp A. Work to be coordinated with NYCT –Surface Operations.

**BUS STATION SOUTH – (BIN 2269750)**

- Prior to start of work Company to provide alternate location for taxi pick-up / drop-off so that four bus lanes can be maintained at all times during deck replacement work.
- Installation of temporary shielding over SIRTOA tracks/station and parking lot area for the full limits of the bridge exclusive of the area under the new pedestrian plaza.
- Demolition of existing concrete deck, bus platform sidewalks and bus canopy brick walls*.
- Removal of steel fascia barriers, bridge mounted lights and drainage system.
- Construction of concrete deck and bus platform sidewalks.
- Installation of new expansion joints with supplemental trough systems.
- Construction of brick walls with steel grating infill and aluminum lattice covering at Bus Ramps A through D. (Walls are to be reconstructed in accordance with the details shown in the Bus Canopy Package Plans. Cost of reconstructing these walls will be paid for under the Item: Reconstruction of Bus Canopy Brick Walls with Steel Grating Infill)
NYCDOT DIVISION OF BRIDGES:

Rehabilitation of SI Ferry Ramps

- Construction of concrete barriers w/straight fencing on top along south and west fascias.
- Replacement of cracked fascia connection angles at fixed-fixed pier caps.
- Installation and operation of containment system (for full limits of the bridge).
- Cleaning (100% lead removal) and painting of existing exposed structural steel. Removal of encasement and painting of beams recently installed under Terminal Reconstruction project (located in the northeast corner of the station) is not part of the project scope*.
- Installation of new drainage system including all catch basins, downspouts and tie-ins to new underground drainage system. (New bridge drainage system is to carry stormwater overhead when over SIRTOA ROW.)
- Installation of new bridge mounted light standards.
- Installation of new underdeck lighting units.
- Installation of pigeon deterrent system over pedestrian / vehicular area and SIR Station Platforms.

* Prior to starting concrete demolition and/or abrasive blasting work on this bridge the Company shall furnish and install a temporary break room trailer for SIRTOA forces. Company is to coordinate with SIRTOA for location of temporary trailer.

OLD VIADUCT - Bus Exit Ramp – (BIN 2269790)

- Installation of temporary shielding for the purposes of encasement removal and inspection for the full limits of the bridge.
- Removal of encasement from superstructure and columns. (Prior to encasement removal the Company shall test a minimum of four additional areas with exposed structural over the SIR tracks to confirm the assumption that the concrete encased steel does not contain lead based paint.)
- Inspection of structural steel – see design service item – Old Viaduct Assessment and Recommendations for Steel Repair.
- Demolition of concrete deck and sidewalks (portion of deck with new pedestrian plaza to remain) and west approach slab.
- Removal of bridge railings, bridge mounted lights and fencing on south sidewalk and existing drainage system.
- Repair of concrete abutments and reconstruction of concrete pedestals.
- Construction of concrete deck, sidewalks and west approach slab.
- Installation of steel railing with concrete parapet and curved top fencing on south fascia and installation of TL-4 rated steel railing on north fascia with curved-top fencing on north fascia.
- Installation of new expansion joints with supplemental trough systems.
- Replacement of existing bearings on the West Abutment and Piers 3 and 5.
- Structural steel repairs of deteriorated members (repair type and limits to be recommended upon inspection of exposed steel by the Company and submitted to the Department for approval – cost to be paid for under Incidental Repair Item)
- Installation and operation of containment system.
- Cleaning and painting of existing structural steel. (Note only the south column and east fascia beam of Bent 7 are known to have lead-based paint.)
- Installation of new drainage system including all catch basins, downspouts and tie-ins to new underground drainage system. (New bridge drainage system is to carry stormwater overhead when over SIRTOA ROW.)
Removal, storage and re-installation of existing bridge mounted light standards on north sidewalk.
- Installation of new underdeck lighting units.
- Re-pointing of masonry wall on west approach.
- Installation of pigeon deterrent system over SIR train storage area.

PEDESTRIAN BRIDGE – 69th Street Terminal Building Overpass (BIN 2270170)
- Installation of temporary shielding for the full limits of the bridge.
- Demolition of existing concrete deck including removal of stairs to Ramp B and concrete roof. (Note: Utilities are currently supported by attachments embedded in the concrete roof. These utilities will have to be temporarily supported during the demolition of the roof. Additionally, the insulation material around these utility pipes contains asbestos therefore special handling will be required.)
- Repair of concrete column bases.
- Construction of concrete deck and expansion joints.
- Installation and operation of containment system.
- Cleaning (100% lead abatement) and painting of existing structural steel including stairs to Passenger Drop-Off / Pick-Up Area.
- Modifications to south fascia girder to eliminate the opening left by the stair removal.
- Construction of new metal roof with ceiling panels to cover utilities. (Note: Ceiling panels to be detailed flush with bottom flange of roof beams to eliminate space for roosting pigeons and removable to allow for future access to utilities)
- Installation of new recessed lighting units in ceiling panels.
- Installation of new underdeck lighting units.
- Installation of pigeon deterrent system on underside of bridge. (Note: Existing pigeon spikes to be removed from underside of bridge)

NORTH RAMP – Entrance and Exit to North Commuter and Stadium Lots – (BIN 2269760)
- Relocation of existing stairway to SIR platform to provide clearance for new ramp.
- Excavation for new North Ramp foundation.
- Hauling and disposal of excess excavation material. (Note: Based on the results of soil sampling at the site Proposers should assume any excess excavation material will be classified as Contaminated, Non-Hazardous, Non-Petroleum Industrial Waste. Should soil testing by the Company at the time of construction indicate that the excess material should be classified as Contaminated, Non-Hazardous, Petroleum Contaminated Waste or Hazardous Waste the Company will be paid the unit price bid for these items. (See the Geotechnical and Environmental Sampling and Testing Report in Section 5 and the Environmental Analysis Plan in Section 6 of Exhibit A in Book 2: Volume 1 for more information on the soil conditions at the site.)
- Construction of new ramp foundations. (Note: Two rounds of groundwater sampling and analysis were performed at the site as part of the preliminary engineering efforts. The testing found one compound, Tetrachloroethene, to slightly exceed NYSDEC TAGM for groundwater quality. Therefore the Company is advised that should their foundation design and chosen method of construction require dewatering they will be required to perform additional groundwater testing to confirm whether contaminants are present. If new testing indicates that the groundwater is contaminated and then the Company will
need to prepare and submit a plan on how the dewatering process will occur, expected volumes, storage requirements, treatment requirements, and disposal needs. All dewatering, treatment, and disposal needs are to be in compliance with applicable regulatory requirements. The cost associated with dewatering, if anticipated, should be included in the lump sum prices bid for Bridge / Ramp Foundations, however at present Proposers shall assume no pre-treatment of groundwater will be necessary. (See the Geotechnical and Environmental Sampling and Testing Report in Section 5 and the Environmental Analysis Plan in Section 6 of Exhibit A in Book 2: Volume 1 for more information on the groundwater conditions at the site.)

- Construction of new ramp bridge substructure including modifications to existing Richmond Terrace abutment.
- Construction of ramp retaining wall.
- Construction of new ramp superstructure including bridge deck, sidewalk with concrete parapet and fencing on south fascia and concrete barrier with fencing on north fascia.
- Construction of new bridge ramp roadway on retained fill.
- Installation of bridge/ramp lighting and drainage.
- Approach tie-in work at Richmond Terrace including construction of new sidewalk and parapet wall to close in void left by removal of existing North Ramp.
- Approach tie-in work at the waterfront street including modifications as necessary to the esplanade area to ensure safe pedestrian passage.
- Restoration of stadium parking lot area including paving and re-stripping and restoration of landscaping and detention basins. (The cost of restoration should consider the potential need to re-strip/re-configure the entire east stadium lot in order to minimize the total loss of parking spaces.)
- Demolition of existing North Ramp structure including foundation removal to a minimum depth of 2’ below final grade.
- Disposal of demolition material in accordance with State and City regulations.
- Backfilling bridge / ramp foundation removal areas with suitable material.
- Restoration of any existing fencing disturbed during demolition operations.

North Municipal Parking Field

- Modifications to accommodate temporary taxi stand and restoration of area once taxis are relocated back to the Bus Station. This will include signing in the terminal to direct taxi users to the new location and at the stand itself. (This is to be coordinated with representatives of the NYCDOT Taxi Program and Passenger Transport Division.)
- Construction of a 4” rolled gravel base in area of lot formerly occupied by the existing North Ramp.
- Repair of localized areas of deteriorated pavement throughout the entire lot.
- Milling and re-surfacing of bituminous concrete pavement (staged to maintain a minimum of 300 parking spaces at all times) for entire lot including area formerly occupied by the existing North Ramp.
- Re-stripping of parking lot. (This is to be coordinated with and approved by NYCDOT Parking Bureau.)
- Installation of new security fencing if and where needed to enclose entire perimeter of the expanded North Municipal Parking lot due to demolition of the existing North Ramp retaining walls. New security fencing to match existing perimeter security fencing.
- Repairs if and where needed to existing lighting system and potential addition of new ground mounted light standards to replace lighting formerly mounted to the North Ramp.
- Re-setting of existing catch basins and repairs to existing drainage system if and where needed. Possible installation of new catch basins with tie-in to existing drainage system in the area formerly occupied by the North Ramp.

**Bus Canopy Package**

Construct all work contained in the Bus Canopy Package drawings included in Section 3 of this Exhibit with the following exception(s):

- All work relative to the repair of the bus canopy platforms and modifications to the brick walls. The existing canopy platforms and brick walls will be removed as part of the deck reconstruction work on Bus Station South. The cost to completely reconstruct these walls in accordance with the details given in the Bus Canopy package shall be paid for under the item Reconstruction of Brick Canopy Wall with Steel Grating Infill in Bus Station South.
- All work relative to painting the bus canopy steel. The canopy steel shall be cleaned and painted in accordance with the requirements of Exhibit I in Book 2: Volume 2 and paid for under the Cleaning and Painting Existing Structural Steel item in Bus Station South.

The following items are to be added to the Bus Canopy Package work:

- Replace existing Public Address System as per NYCT requirements
- Replace existing Holding Light System as per NYCT requirements

**Site Drainage**

The actual extent of construction is dependent on the Company’s inspection findings and design/construction strategy to ensure unrestricted flow from the project bridges and the North Municipal Parking Field to the various outfall locations in the Upper New York Bay. Proposers shall assume for Price Proposal purposes that the entire stormwater drainage system up to but not including existing outfalls will require replacement with a fully code compliant system. However, should the approved strategy be less than complete system replacement it is expected that the City will receive a negotiated credit for the difference between the bid price for complete replacement versus the work actually performed.

**Public Utilities (Exclusive of Site Drainage):**

All public utilities within the contract limits, such as storm water drainage, sanitary sewers, hydrants, water pipes, street lighting, SIRTOA signals and communication lines, etc. shall be maintained during the entire length of construction. It will be the Company’s responsibility to temporarily protect, support and/or relocate these utilities as required based on the nature of the proposed work. No separate payment will be made to temporarily protect, support and/or relocate utilities shall be considered included the Company’s Price Proposal.

However the cost to permanently relocate a utility or repair/upgrade a public service at the request of the owner will be paid for under this item provided it is not already covered under a separate item in the contract such as site drainage.

**Architectural Enhancements (Bus Canopies & Pedestrian Bridge)**

The actual extent of construction is dependent on the approved enhancement strategies.
SECTION 2
PRELIMINARY DRAWINGS
# PRELIMINARY DRAWING LIST

<table>
<thead>
<tr>
<th>SHEET No.</th>
<th>DWG. No.</th>
<th>DRAWING NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE PLANS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>G1</td>
<td>KEY PLAN – GENERAL SCOPE OF WORK</td>
</tr>
<tr>
<td>2</td>
<td>G2</td>
<td>KEY SUBSTRUCTURE PLAN – CLEANING &amp; PAINTING SCOPE</td>
</tr>
<tr>
<td>RAMP A (BIN 22700180)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>B-1</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>4</td>
<td>B-2</td>
<td>TYPICAL SECTIONS</td>
</tr>
<tr>
<td>RAMP B (BIN2269770)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>B-3</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>6</td>
<td>B-4</td>
<td>TYPICAL SECTIONS</td>
</tr>
<tr>
<td>7</td>
<td>B-5</td>
<td>STEEL REPAIR WORK</td>
</tr>
<tr>
<td>RAMP C (BIN 2269780)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>B-6</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>9</td>
<td>B-7</td>
<td>TYPICAL SECTION</td>
</tr>
<tr>
<td>10</td>
<td>B-8</td>
<td>STEEL REPAIR WORK</td>
</tr>
<tr>
<td>RAMP D (BIN 2269730)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>B-9</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>12</td>
<td>B-10</td>
<td>TYPICAL SECTION</td>
</tr>
<tr>
<td>14</td>
<td>B-11</td>
<td>STEEL REPAIR WORK</td>
</tr>
<tr>
<td>BUS EXIT RAMP – OLD VIADUCT (BIN 2269790)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>B-12</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>15</td>
<td>B-13</td>
<td>TYPICAL SECTION</td>
</tr>
<tr>
<td>16</td>
<td>B-14</td>
<td>FRAMING PLAN (1 of 2)</td>
</tr>
<tr>
<td>17</td>
<td>B-15</td>
<td>FRAMING PLAN (2 of 2)</td>
</tr>
<tr>
<td>BUS STATION NORTH (BIN 2269740) &amp; SOUTH (BIN 2269750)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>B-16</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>19</td>
<td>B-17</td>
<td>TYPICAL SECTION AND DETAILS</td>
</tr>
<tr>
<td>20</td>
<td>B-18</td>
<td>CONCRETE DECK DETAILS (BUS STATION NORTH)</td>
</tr>
<tr>
<td>21</td>
<td>B-19</td>
<td>STEEL REPAIR WORK (SOUTH)</td>
</tr>
<tr>
<td>22</td>
<td>B-20</td>
<td>STEEL REPAIR WORK (NORTH)</td>
</tr>
<tr>
<td>CONCEPTUAL STEEL REPAIR DETAILS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>D-1</td>
<td>TYPE A – REPLACEMENT OF FASCIA CONNECTION ANGLES TO FIXED-FIXED</td>
</tr>
<tr>
<td>24</td>
<td>D-2</td>
<td>TYPE B – REFURBISH SLIDING STRINGER CONNECTION</td>
</tr>
<tr>
<td>25</td>
<td>D-3</td>
<td>TYPE C – REPLACEMENT OF SLOTTED FASCIA</td>
</tr>
<tr>
<td>26</td>
<td>D-4</td>
<td>TYPE D – DIAPHRAGM REPLACEMENT</td>
</tr>
<tr>
<td>27</td>
<td>D-5</td>
<td>TYPE E – SUPPLEMENTAL PLATING OF DETERIORATED</td>
</tr>
<tr>
<td>28</td>
<td>D-6</td>
<td>TYPE F – FASCIA FLANGE REPAIR DETAIL</td>
</tr>
<tr>
<td>SHEET No.</td>
<td>DWG. No.</td>
<td>DRAWING NAME</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>PEDESTRIAN BREEZEWAY (BIN 2270170)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>B-21</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>30</td>
<td>B-22</td>
<td>TYPICAL SECTION</td>
</tr>
<tr>
<td>NORTH RAMP (BIN 2269760)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>B-23</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>32</td>
<td>B-24</td>
<td>TYPICAL SECTION (CONCEPTUAL)</td>
</tr>
<tr>
<td>33</td>
<td>B-25</td>
<td>ROADWAY PROFILE</td>
</tr>
<tr>
<td>34</td>
<td>B-26</td>
<td>MODIFICATIONS TO EXISTING STADIUM STAIRS - PLAN</td>
</tr>
<tr>
<td>35</td>
<td>B-27</td>
<td>MODIFICATIONS TO EXISTING STADIUM STAIRS – ELEVATION</td>
</tr>
<tr>
<td>NORTH MUNICIPAL PARKING FIELD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>P1</td>
<td>GENERAL PLAN</td>
</tr>
<tr>
<td>37</td>
<td>P2</td>
<td>TEMPORARY TAXI LANE</td>
</tr>
<tr>
<td>PIGEON DETERRENT SYSTEM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>PD-1</td>
<td>PIGEON DETERRENT SYSTEM – LIMITS OF WORK</td>
</tr>
<tr>
<td>EXISTING DRAINAGE PLANS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNDERGROUND FACILITIES – BUS STATION AREA (CONTRACT 2591R)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNDERGROUND FACILITIES – NORTH RAMP AREA (NEW TERMINAL CONTRACT)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NOTE:
1. NO EXISTING PLANS WERE AVAILABLE FOR THIS STRUCTURE. MEASUREMENTS OF BRIDGE LENGTH AND WIDTH ARE BASED ON SURVEY INFORMATION. SEE EXHIBIT A, SECTION 10 TOPOGRAPHIC SURVEY FOR MORE INFORMATION.
2. FOR TYPICAL SECTIONS, SEE DIAG. NO. B-2.
3. PEDESTRIAN ACCESS THROUGH THE ENTRANCE PLAZA MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.
4. COMPANY TO COORDINATE CONSTRUCTION ACTIVITIES AT RAMP A WITH NYCEDC AND THE LIGHTHOUSE DEVELOPMENT CONTRACTOR, SEE EXHIBIT B FOR CONTACT INFORMATION.
5. RAMP A CANNOT BE USED TO CARRY PUBLIC TRAFFIC.
NOTE:

1. NO EXISTING PLANS WERE AVAILABLE FOR 
   THIS STRUCTURE. THE SUPERSTRUCTURE TYPE 
   WAS ASSUMED TO BE PRE-STRESSED CONCRETE 
   BEAMS WITH A SINGLE COURSE DECK 
   APPROXIMATELY 7" THICK.

2. SUPERSTRUCTURE MATERIAL TYPE AND NUMBER OF 
   BEAMS ARE CONCEPTUAL. COMPANY IS TO DESIGN AND 
   DETAIL A SUPERSTRUCTURE THAT SATISFSIES THE 
   CRITERIA GIVEN IN EXHIBIT 5 - TECHNICAL SPECIFICATIONS.
TYPICAL SECTION (EXISTING)  
LOOKING WEST

TYPICAL SECTION (PROPOSED)  
LOOKING WEST

NOTE:
1. CONCRETE DECK CONSTRUCTION SHALL BE PERFORMED IN A MANNER THAT ADDRESSES EXCESSIVE LIVE LOAD VIBRATIONS DURING CASTING AND CURING.
2. IF STAGED CONSTRUCTION LONG DURATION, A COLD-PLACEMENT CEMENT модификатор CONCRETE MUST BE USED WITH CONSULTATION TO AVOID COLD JOINTS THAT MAY REQUIRE RESPONSES.
3. UNBROKEN SHOULDER AND FRAMING TO REMAIN.
4. EXISTING UTILITY UTILITIES TO REMAIN.
5. LIGHTWEIGHT

CITY OF NEW YORK  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF BRIDGES

REHABILITATION OF RAMP STRUCTURES  
AT THE ST. GEORGE FERRY TERMINAL

RAMP "F"  
TYPICAL SECTIONS

REHABILITATION OF RAMP STRUCTURES  
AT THE ST. GEORGE FERRY TERMINAL

PLAN - 9420800231  9420800119

DEVELOPED BY  
R. E. M. Engineering Inc.

PREPARED BY  
IN CHARGE  
DESIGNER  
CHECKER

NEW YORK  
STATE  
FEDERAL AID PROJECT NO.  
SHEET NO.  
TOTAL SHEETS
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>BEG-SED</th>
<th>PIER 1</th>
<th>PIER 2</th>
<th>PIER 3</th>
<th>PIER 4</th>
<th>PIER 5</th>
<th>PIER 6</th>
<th>PIER 7</th>
<th>PIER 8</th>
<th>PIER 9</th>
<th>PIER 10</th>
<th>PIER 11</th>
<th>PIER 12</th>
<th>PIER 13</th>
<th>PIER 14</th>
<th>PIER 15</th>
<th>PIER 16</th>
<th>PIER 17</th>
<th>PIER 18</th>
<th>END-SHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM COND</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
</tr>
<tr>
<td>NO OF</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
</tr>
</tbody>
</table>

**STRIKE OFF**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>BEG-SED</th>
<th>PIER 1</th>
<th>PIER 2</th>
<th>PIER 3</th>
<th>PIER 4</th>
<th>PIER 5</th>
<th>PIER 6</th>
<th>PIER 7</th>
<th>PIER 8</th>
<th>PIER 9</th>
<th>PIER 10</th>
<th>PIER 11</th>
<th>PIER 12</th>
<th>PIER 13</th>
<th>PIER 14</th>
<th>PIER 15</th>
<th>PIER 16</th>
<th>PIER 17</th>
<th>PIER 18</th>
<th>END-SHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM COND</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
<td>FEED</td>
</tr>
<tr>
<td>NO OF</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
<td>OVERN TRACKS</td>
<td>SHOULDER REQUIRED</td>
</tr>
</tbody>
</table>

**REPAIR TYPE A**
- Replacement of fascia connection to steel framed pier cap

**REPAIR TYPE B**
- Replacement of steel framed pier cap to steel framed pier

**REPAIR TYPE C**
- Replacement of steel framed pier to steel framed pier cap

---

**FRAME PLAN**

- Replace missing bolts/nuts with high strength bolts
- See steel repair table for details

**NOTE:**
- For conceptual steel repair details, see drawing NO. D-1-2 & D-3.
NOTES:
1. BRIDGE MOUNTED LIGHT STANDARDS AND SCUPPERS ARE SHOWN AT EXISTING LOCATIONS, GIB COMPANY TO EVALUATE AND DESIGN NEW LIGHTING AND DRAINAGE SYSTEM.
2. FOR TYPICAL SECTION, SEE DWG. NO. B-7, AND FOR STEEL REPAIR WORK SEE DWG. NO. B-8.
3. COMPANY TO COORDINATE TEMPORARY RELOCATION OF MUNICIPAL PARKING WITH NYCDOT PARKING BUREAU. SEE EXHIBIT B FOR CONTACT INFORMATION.
RAMP C (BIN2269780)

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>BRG. CONDITION</th>
<th>NO. OF LOCATIONS</th>
<th>SHORING REQUIRED</th>
<th>OVER TRACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEGIN ABUT</td>
<td>EXP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIER 1</td>
<td>INT</td>
<td>2</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PIER 2</td>
<td>INT</td>
<td>2</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>END ABUT</td>
<td>FIX</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**REPAIR "TYPE A"**

**REPLACEMENT OF FASCIA CONNECTION ANGLES TO FIXED / FIXED PIER CAP**

**CURVED PLATE ORDER**

**REPAIR TYPE A**

**TYPICAL AT BOTH FASCIA OF ALL FIX-FIX PIERS**

**NOTE:**

FOR CONCEPTUAL STEEL REPAIR DETAIL, SEE DRAWING NO.D-1.

**FRAMING PLAN**

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES
AT THE ST. GEORGE, STATEN ISLAND FERRY TERMINAL

RAIL "C" STEEL REPAIR WORK

IN CHARGE: __________________

DESIGNER: __________________

CHECKER: __________________

DATE: ___________________
1. **Concrete Deck Construction** shall be performed in a manner that addresses excessive live load vibrations during casting and curing.

2. **Limits of Deck Reconstruction** may increase to facilitate maintenance and protection of traffic during deck construction.

3. The company shall restore any existing constructed sidewalk plaza that may be disturbed by the proposed work, restored areas shall match existing overall appearance in color, materials and quality of construction.

**NOTE:**

- **EXISTING DECK / SIDEWALK PLAZA TO REMAIN**
- **EXISTING CURB TO REMAIN**
- **PROPOSED CURVED PEDESTRIAN FENCING**
- **REINSTALLING EXISTING LIGHTING STANDARDS**
- **LIMITS OF DECK RECONSTRUCTION**
- **EXISTING RAILING TO REMAIN**
SECTION A

(SHOWING EXISTING & PROPOSED CONSTRUCTION)

NOTES:
1. AFTER ENGAGEMENT HAS BEEN REMOVED THE COMPANY SHALL INSPECT THE EXISTING STEEL AND PREPARE A REPORT OUTLINING FINDINGS AND RECOMMENDATIONS. IF REPAIRS ARE WARRANTED AND APPROVED BY CITY DOT, THE COST TO PERFORM THESE REPAIRS WILL BE PAID FOR UNDER THE INCREMENTAL REPAIR BEAM IN THE CONTRACT.
2. FOR LOCATION OF SECTION SEE DRAWING. 
EXISTING DECK AND OVERLAY

EPOXY COATED BARS

EXISTING REINFORCEMENT

DETIAL (DECK REPAIR AND OVERLAY RECONSTRUCTION)

RECONSTRUCT LIGHTWEIGHT CONCRETE OVERLAY (6")

REPLACE 3/4" WATERPROOFING MEMBRANE

EXISTING STRUCTURAL CONCRETE DECK TO REMAIN (REPAIR AS NEEDED)

RECONSTRUCT 8" STRUCTURAL CONCRETE DECK

EPOXY COATED BARS

RECONSTRUCT LIGHTWEIGHT CONCRETE OVERLAY (6")

REPLACE 3/4" WATERPROOFING MEMBRANE

EPOXY COATED REINFORCEMENT

RECONSTRUCT 8" STRUCTURAL CONCRETE DECK

DETAIL (OVERLAY AND DECK RECONSTRUCTION)
EXISTING STEEL FRAMING IN THIS AREA HAS BEEN MODIFIED UNDER THE TERMINAL RECONSTRUCTION PROJECT.

REPLACE CORRODED RIVETS WITH HIGH STRENGTH BOLTS
REPLACE CONNECTION ANGLES BETWEEN COLUMN AND STRINGER
REPAIR STRINGER WEBS AND BOTTOM FLANGES

FOR CONCEPTUAL STEEL REPAIR DETAILS SEE DWG NDG. D-4.

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES AT THE ST. GEORGE, STATEN ISLAND FERRY TERMINAL

BUS STATION NORTH
STEEL REPAIR WORK

REHABILITATION OF STRINGER REPLACEMENT AT THE ST. GEORGE, S. J. FERRY TERMINAL

P.I.N.: 8410856BR330
BIN 2269740

REPAIR TYPE D
DAMAGE/STRINGER REPLACEMENT

LOCATION | AREA CONDITION | NO. OF LOCATIONS | SHORING REQUIRED | DEPTH OF SLOPE
--- | --- | --- | --- | ---
PIER 1 | FAIR | 3 | | |
PIER 2 | FAIR | | | |
PIER 3 | FAIR | | | |
PIER 4 | FAIR | | | |
PIER 5 | FAIR | | | |
PIER 6 | FAIR | | | |
PIER 7 | FAIR | | | |
PIER 8 | FAIR | | | |
PIER 9 | FAIR | | | |
PIER 10 | FAIR | | | |
PIER 11 | FAIR | | | |
END-MAST PIER B | FAIR | | | |
NOTES:
1. DURING CONNECTION REPAIR, FASCIA GIRDERS SHALL BE TEMPORARILY SUPPORTED EITHER BY SHORING TO GRADE OR HANGING SUPPORTS TO BENT GIRDER.

SECTION 1

EXISTING

W36x230 BENT GIRDER

FASCIA PLATE GIRDER

\[ \angle 7^\circ 4\frac{3}{8}^\circ \]

CRACK

W36x230 BENT GIRDER

FASCIA PLATE GIRDER

\[ \angle 7^\circ 4\frac{3}{8}^\circ \]

REMOVE EXISTING
\[ \angle 7^\circ 4\frac{3}{8}^\circ \]

CRACK

SECTION 2

CONCEPTUAL REPAIR

TYPE A

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES AT THE ST. GEORGE
STATEN ISLAND FERRY TERMINAL

REPLACEMENT OF FASCIA CONNECTION ANGLES TO FIXED/FIXED PER CAP
TYPICAL INTERIOR STRINGER CONNECTION AT BENT 53-54
CONNECTION AT BENT 57-58
SIMILAR
Scale 1/8" = 1'

NOTES:

1. TEMPORARY SHORING OF STRINGERS WILL BE REQUIRED PRIOR TO REMOVAL OF KEEPER ANGLES.

2. SHORING CAN BE FROM BELOW WHERE ACCESS PERMITS OR FROM ABOVE. IF DECK IS STILL ON AT TIME OF REPAIR COMPANY MAY OPT TO DRILL THROUGH DECK AND ERECT A CATCH SYSTEM OR IF DECK IS OFF, SUPPORT STRINGER FROM THE BENT GIRDER.

CONCEPTUAL REPAIR
TYPE B

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES AT THE ST. GEORGE
STATEN ISLAND FERRY TERMINAL

REFURBISH SLIDING STRINGER CONNECTION

09/20/2005
NOTES:

1. ALL RIVETS IN CONNECTION ARE TO BE REPLACED WITH HIGH STRENUGH BOLTS.

2. EXISTING PLANS DO NOT PROVIDE DETAILS OF THIS CONNECTION. FOR ESTIMATING PURPOSES ASSUME 3/8" THICK 14" X 14" BENT PLATE WITH 4 - 2" X 1" SLOTTED HOLES AND 12 - 1" DIAMETER HOLES

3. TEMPORARY SHORING IS NOT NECESSARY FOR THIS REPAIR HOWEVER IT MAY MAKE FIT UP WITH EXISTING HOLES IN FASCIA GIRDERS EASIER.

CONCEPTUAL REPAIR

TYPE C

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES AT THE ST. GEORGE
STATEN ISLAND FERRY TERMINAL

REPLACEMENT OF SLOTTED FASCIA CONNECTION ANGLE
REPLACE DETERIORATED END DIAPHRAGM MEMBER (IN-KIND)

ADJACENT END DIAPHRAGM

$W30\times108$
STRINGER

REPLACE EXISTING CONNECTION ANGLES

REPLACE EXISTING END DIAPHRAGM WITH NEW END DIAPHRAGM

TEMPORARY SUPPORT

REPLACE EXISTING END DIAPHRAGM WITH NEW END DIAPHRAGM

NOTES:

1. TEMPORARY SHORING OF ADJACENT DIAPHRAGM MEMBERS WILL BE REQUIRED PRIOR TO REMOVAL OF CONNECTION ANGLES.

2. SHORING CAN BE FROM BELOW WHERE ACCESS PERMITS OR FROM ABOVE. IF DECK IS STILL ON AT TIME OF REPAIR COMPANY MAY OPT TO DRILL THROUGH DECK AND ERECT A CATCH SYSTEM OF IF DECK IS OFF, SUPPORT MEMBERS FROM THE STRINGERS.

3. ALL RIVETS REMOVED FROM THE CONNECTION ANGLES ARE TO BE REPLACED WITH HIGH STRENGTH BOLTS.

CONCEPTUAL REPAIR
TYPE D

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

REHABILITATION OF RAMPS STRUCTURES AT THE ST. GEORGE
STATEN ISLAND FERRY TERMINAL

DIAPHRAGM REPLACEMENT
REPLACE FLANGE

REMOVE DETERIORATED MATERIAL DOWN TO SOUND METAL AND REPLACE SECTION OF FLANGE THAT HAS BEEN REMOVED

CONCEPTUAL REPAIR
TYPE E

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

REHABILITATION OF RAMP STRUCTURES AT THE ST. GEORGE STATEN ISLAND FERRY TERMINAL

SUPPLEMENTAL PLATING OF DETERIORATED MEMBERS
1. ALL RIVETS REMOVED FROM BOTTOM FLANGE ANGLES ARE TO BE REPLACED WITH HIGH STRENGTH BOLTS.

REMOVE AND REPLACE (IN-KIND) DETERIORATED BOTTOM FLANGE ANGLES FOR THE FULL LENGTH
PLAN
(SHOWING FLOOR FRAMING)

NOTE:
1. THE LIMITS OF WORK SHOWN FOR THIS BRIDGE ARE A MINIMUM. THE D&B COMPANY IS TO PROPOSE ALTERNATIVE ADDITIONAL ITEMS TO IMPROVE THE AESTHETICS OF THE BRIDGE UNDER THE ARCHITECTURAL ENHANCEMENT ITEM DESCRIBED IN THE SCOPE OF WORK IN BOOK S, EXHIBIT E.
2. FOR SECTION A-A SEE DWG. B-27.

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO., HBR-1217
REHABILITATION OF RAMPS STRUCTURES AT THE ST. GEORGE, STATEN ISLAND FERRY TERMINAL

PEDESTRIAN BRIDGE
GENERAL PLAN

PREPARED BY
IN CHARGE DRAWER
DESIGNER CHECKER

DRAWN
CHECKED

REV.

20 APRIL 2021
EXISTING NORTH RAMP TO BE DEMOLISHED AFTER NEW BRIDGE IS COMPLETED AND OPEN TO TRAFFIC.

PROPOSED NORTH RAMP (SDT/1)

CONCRETE BARRIER & PEDESTRIAN FENCING

EXISTING RAMP

EDGE OF ELEVATED WALKWAY

EXISTING STAIR TO ELEVATED WALKWAY TO BE MODIFIED (SEE DETAILS ON DWS N35, B-26 AND B-27)

PROPOSED NORTH RAMP 540' (SDT/1)

CONCRETE PARAPET & CURVED-TOP PEDESTRIAN FENCING

SIDEWALK

FACE OF EDG PARKING LOT

NEW RAMP TO BE DESIGNED TO:

1. Maintain all existing points of station access below the ramp.
2. Allow for a minimum of 20 parking spaces underneath the ramp.
3. Provide sufficient turning radius at the top and bottom of the ramp for fire fighting equipment to access 80040A tracks.
4. Provide a smooth transition with approach roadways and esplanade area to ensure safe pedestrian passage.

NOTE:
For typical section, see DWS N30, B-24 and for vertical profile see DWS N30, B-25.

GENERAL RAMP DESIGN CRITERIA

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES AT THE ST. GEORGE STATEN ISLAND FERRY TERMINAL

NORTH RAMP GENERAL PLAN

NYC DOT

LOCATION:
8-23

SHEET NO. 1

A

B

C

D
TYPICAL SECTION
(CONCEPTUAL)
REHABILITATION OF RAMP STRUCTURES
AT THE ST. GEORGE S.I. FERRY TERMINAL

PLAN - 64106586/1232

NOTE:
FOR STAIR ELEVATIONS,
SEE DWG. NO. B-27.

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES
AT THE ST. GEORGE,
STATEN ISLAND FERRY TERMINAL

MODIFICATION TO EXISTING STADIUM STAIR
PLAN

PROPOSED CONCRETE BARRIER & PEDESTRIAN
FENCING (NORTH RAMPS)

EXISTING STADIUM WALKWAY

TOP OF RAMPS
R, EA (AT-4, AT-5)
INSTALL GATE

BRIDGE DECK
PROPOSED NORTH RAMPS

REPLACE EXISTING
STAIR & LANDING

FACE OF EXISTING
RETAINING WALL

C19, C20, C21

PLAN

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

CONTRACT NO. HBR-1217
REHABILITATION OF RAMP STRUCTURES
AT THE ST. GEORGE,
STATEN ISLAND FERRY TERMINAL

MODIFICATION TO EXISTING STADIUM STAIR
PLAN

PROPOSED CONCRETE BARRIER & PEDESTRIAN
FENCING (NORTH RAMPS)

EXISTING STADIUM WALKWAY

TOP OF RAMPS
R, EA (AT-4, AT-5)
INSTALL GATE

BRIDGE DECK
PROPOSED NORTH RAMPS

REPLACE EXISTING
STAIR & LANDING

FACE OF EXISTING
RETAINING WALL

C19, C20, C21

NOTE:
FOR STAIR ELEVATIONS,
SEE DWG. NO. B-27.
NOTES:

1. Work at the North Municipal Parking Field to also include:
   - Restriping of Parking Lot
   - Installation of new security fencing if and where needed to enclose perimeter of expanded North Municipal Lot. Fencing shall match existing security fencing.
   - Installation of ground mounted lighting standards to replace bridge mounted lights. Repairs to existing lighting system if and where needed.
   - Installation of new catch basins and TE-in to existing drainage system in area formerly occupied by north ramp if needed. Re-setting of existing catch basins and repairs to existing drainage system if and where needed.

2. Worked to be staged such that a minimum of 300 parking spaces are maintained at all times.

3. Plans for the proposed work at the North Municipal Parking Field to be submitted to NYC DOT Parking Bureau for review and approval.

LEGEND

- PROPOSED 4” ROLLED GRAVEL BASE & 2” BIFLAMINOUS CONCRETE SURFACE COURSE IN THE AREA OF THE DEMOLISHED NORTH RAMP. TOTAL ESTIMATED AREA IS APPROXIMATELY 20,000 SF.
- PROPOSED 2’ MILLING AND RE-SURFACING WITH BIFLAMINOUS CONCRETE SURFACE COURSE AND PAVEMENT BASE REPAIR AS NECESSARY IN AREA OF EXISTING PARKING LOT. TOTAL ESTIMATED AREA IS APPROXIMATELY 150,000 SF. ASSUME 10% OF THIS AREA REQUIRES PAVEMENT BASE REPAIR.
NOTES:

1. THE COMPANY SHALL ASSUME FOR THE PURPOSES OF PREPARING THEIR PRICE PROPOSALS THAT TAXI SERVICE WILL BE TEMPORARILY RELOCATED TO THE LOCATION SHOWN ON THIS DRAWING. HOWEVER, THE COMPANY MAY EXPLORE OTHER LOCATIONS / OPTIONS AFTER EPA PROVIDES APPROVALS AND RECEIVES FROM ALL IMPACTED AGENCIES, THIS INCLUDES BUT IS NOT LIMITED TO NYCDOT TRAFFIC OPERATIONS, NYCDOT HIGHWAY DESIGN, NYCDOT PARKING BUREAUX, NYCDOT PASSENGER TRANSPORT DIVISION AND NYCDOT SURFACE OPERATIONS.

2. THE DETAILS SHOWN ARE SCHEMATIC IN NATURE, FURTHER MODIFICATIONS TO THE NORTH MUNICIPAL PARKING FIELD MAY BE NECESSARY TO ENSURE APPROPRIATE TRAFFIC FLOW INTO AND OUT OF THE LOT AT ALL TIMES.

3. THE PICK-UP AND DROP-OFF AREA SHALL PROVIDE SUITABLE ROOM FOR FIVE STANDING VEHICLES.

4. THE COMPANY SHALL RESTORE THE LANE OF THE PARKING FIELD TO ITS ORIGINAL CONFIGURATION ONCE POOR REPLACEMENT IS COMPLETE TO ALLOW TAXI SERVICE TO RESUME IN THE NORTHERN MOST BUS STATION LANE.

5. SINCE RELOCATING TAXI SERVICE TO THIS LOCATION REDUCES THE NUMBER OF AVAILABLE PARKING SPACES AND IS MORE INCONVENIENT TO TAXI USERS, THE COMPANY SHALL MAKE EVERY REASONABLE EFFORT TO MINIMIZE THE TIME THAT SERVICE NEEDS TO BE RELOCATED.

6. IT WILL BE THE RESPONSIBILITY OF THE COMPANY TO COORDINATE WITH VARIOUS DIVISIONS OF NYCDOT AND NYCT TO ENSURE APPROPRIATE SIGNS ARE PROVIDED TO INFORM THE TRAVELING PUBLIC ABOUT THE RELOCATED TAXI SERVICE.

7. THE NEWLY INSTALLED SECURITY FENCING AND ROLLING GATES AT THE TERMINAL MUST NOT BE IMPACTED IN ANY WAY AS A RESULT OF THE RELOCATION.
NOTE:
THIS INFORMATION IS FROM "ST. GEORGE STATION
- FERRY TERMINAL RENOVATION" CONTRACT DRAWINGS.
The actual condition and details of existing
DRAINAGE SYSTEM IS TO BE FIELD VERIFIED.
SECTION 3

BUS CANOPY PACKAGE (PLANS)
ST. GEORGE STATION
BUS CANOPY PACKAGE

INCLUDING:
- BUS CANOPY RENOVATION
- AUTOMATIC DOORS - NIC
- PE-2 VESTIBULE
- SLIP-LIFTING HOOKS - NIC

PREPARED FOR:
New York City Economic Development Corporation,
Location:
110 William Street, New York, NY, 10038
Tel: 212-558-5000, Fax: 212-302-3811

PREPARED BY:
HELLMUTH, OBATA + KASSABAUM, P.C.
ARCHITECTURAL ENGINEERING, PLANNING, INTERIOR, LANDSCAPE, CIVIL
220 Avenue of the Americas
New York, NY, 10011
www.hok.com
Tel: 212-341-1200
Fax: 212-343-1143

CONSTRUCTION MANAGER:
Slansky USA Building, Inc.
130 Varick Avenue
New York, NY, 10013
Tel: 212-301-1200
Fax: 212-991-6200

NEW YORK CITY DEPARTMENT OF TRANSPORTATION

RFP #6 ISSUED FOR BID
November 17, 2006
SECTION 4

PRELIMINARY QUANTITIES
### PRELIMINAY QUANTITIES - SUMMARY TABLE

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>ITEM DESCRIPTION</th>
<th>Units</th>
<th>Ramp A</th>
<th>Ramp B</th>
<th>Ramp C</th>
<th>Ramp D</th>
<th>Old Viaduct</th>
<th>Bus Station South</th>
<th>Bus Station North</th>
<th>Ped Bridge</th>
<th>North Ramp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING BRIDGE REMOVAL ITEMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Deck / Sidewalk / App Slab</td>
<td>CY</td>
<td>85</td>
<td>1,800</td>
<td>290</td>
<td>630</td>
<td>600</td>
<td>3,870</td>
<td>540</td>
<td>44</td>
<td>520</td>
</tr>
<tr>
<td>b</td>
<td>Parapet / Barrier</td>
<td>LF</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Beams</td>
<td>LF</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Concrete Overlay</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>460</td>
<td></td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Superstructure Encasement</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Column Encasement</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>g</td>
<td>Substructure</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,010</td>
</tr>
<tr>
<td>h</td>
<td>Roof Slab</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Beams</td>
<td>LBS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>745,000</td>
</tr>
<tr>
<td>b</td>
<td>Parapet / Barrier</td>
<td>LF</td>
<td>1,900</td>
<td>400</td>
<td>330</td>
<td>610</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>c</td>
<td>Stairs (Ramp B / Ped bridge)</td>
<td>LBS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24,000</td>
</tr>
<tr>
<td>d</td>
<td>Drainage Scuppers</td>
<td>EA</td>
<td>14</td>
<td>4</td>
<td>13</td>
<td>2</td>
<td>58</td>
<td>17</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>e</td>
<td>Downspouts</td>
<td>LF</td>
<td>900</td>
<td>60</td>
<td>400</td>
<td>24</td>
<td>700</td>
<td>225</td>
<td></td>
<td></td>
<td>210</td>
</tr>
<tr>
<td><strong>Misc Removal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Light Standards</td>
<td>EA</td>
<td>9</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Light Standards (Re-install)</td>
<td>EA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Underdeck Units</td>
<td>EA</td>
<td>18</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>15</td>
<td>39</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lattice Structure</td>
<td>LS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partial removal/mod of RR stairs</td>
<td>LS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Bus Canopy Removal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brick Masonry Walls</td>
<td>SY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,630</td>
</tr>
<tr>
<td><strong>3 Temporary Shielding</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td>2,500</td>
<td>66,000</td>
<td>11,400</td>
<td>29,000</td>
<td>33,000</td>
<td>131,300</td>
<td>38,000</td>
<td>4,000</td>
<td>4,400</td>
<td></td>
</tr>
<tr>
<td><strong>PROPOSED BRIDGE RECONSTRUCTION ITEMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Deck &amp; Sidewalk</td>
<td>CY</td>
<td>60</td>
<td>2,200</td>
<td>335</td>
<td>950</td>
<td>600</td>
<td>4,320</td>
<td>610</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Approach Slab</td>
<td>CY</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Concrete Pedestrian Parapet</td>
<td>LF</td>
<td>1,000</td>
<td>200</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Concrete Traffic Barrier</td>
<td>LF</td>
<td>135</td>
<td>900</td>
<td>200</td>
<td></td>
<td>610</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Concrete Overlay</td>
<td>CY</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Waterproofing Membrane</td>
<td>SY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,000</td>
</tr>
<tr>
<td>g</td>
<td>Substructure</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h</td>
<td>Roof Slab</td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Epoxy Coated Steel</td>
<td>LBS</td>
<td>7,300</td>
<td>180,000</td>
<td>27,200</td>
<td>76,400</td>
<td>48,600</td>
<td>350,000</td>
<td>72,000</td>
<td>8,900</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Deck (w/o exp steel)</td>
<td>SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,800</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Deck (w/ exp steel)</td>
<td>SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,500</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Pedestal Reconstruction</td>
<td>EA</td>
<td>8</td>
<td>7</td>
<td>12</td>
<td>14</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Substructure (w/o exp steel)</td>
<td>SF</td>
<td>200</td>
<td>250</td>
<td>225</td>
<td>200</td>
<td>200</td>
<td>100</td>
<td>500</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Substructure (w/ exp steel)</td>
<td>SF</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
<td>200</td>
<td>100</td>
<td>500</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Structural Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Beams</td>
<td>LBS</td>
<td>54,600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Bridge Railing Four Rails (TL-4)</td>
<td>LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>330</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Bearing Replacement</td>
<td>EA</td>
<td>8</td>
<td>7</td>
<td>17</td>
<td>17</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Shear studs</td>
<td>EA</td>
<td>63,000</td>
<td>3,650</td>
<td>7,800</td>
<td>2,700</td>
<td>18,200</td>
<td>9,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# PRELIMINARY QUANTITIES - SUMMARY TABLE

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>ITEM DESCRIPTION</th>
<th>Units</th>
<th>Ramp A</th>
<th>Ramp B</th>
<th>Ramp C</th>
<th>Ramp D</th>
<th>Old Viaduct</th>
<th>Bus Station South</th>
<th>Bus Station North</th>
<th>Ped Bridge</th>
<th>North Ramp</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Structural Steel (Repair)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Replace Fascia Conn. Angle at F/F Pier</td>
<td>EA</td>
<td>20</td>
<td>4</td>
<td>6</td>
<td></td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Refurbish Sliding Stringer Conn at Exp Pier</td>
<td>EA</td>
<td>51</td>
<td></td>
<td>12</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Replace Fascia Conn. Angle at E/F Pier</td>
<td>EA</td>
<td>18</td>
<td></td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Stringer / Diaphragm Replacement</td>
<td>EA</td>
<td></td>
<td>9</td>
<td></td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Supplemental Plating</td>
<td>EA</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Fascia Flange Repair</td>
<td>EA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Superstructure (Lead Abatement)</td>
<td>SF</td>
<td>150,000</td>
<td>26,900</td>
<td>73,800</td>
<td>363,500</td>
<td>153,000</td>
<td>13,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Columns (Lead Abatement)</td>
<td>SF</td>
<td>34,600</td>
<td>800</td>
<td>4,700</td>
<td>4,900</td>
<td>35,000</td>
<td>28,500</td>
<td>2,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Bus Canopies (Lead Abatement)</td>
<td>SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64,000</td>
<td>3,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Superstructure (Isolated Lead Abatement)</td>
<td>SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>86,600</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Columns (Isolated Lead Abatement)</td>
<td>SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,900</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Painting Existing Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Superstructure</td>
<td>SF</td>
<td>150,000</td>
<td>26,900</td>
<td>73,800</td>
<td>86,600</td>
<td>363,500</td>
<td>153,000</td>
<td>13,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Columns</td>
<td>SF</td>
<td>34,600</td>
<td>800</td>
<td>4,700</td>
<td>4,900</td>
<td>35,000</td>
<td>28,500</td>
<td>2,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Overhead Pipe (12” Diam.)</td>
<td>LF</td>
<td>250</td>
<td>330</td>
<td>210</td>
<td>600</td>
<td>1,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Overhead Pipe (16” Diam.)</td>
<td>LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joint</td>
<td>LF</td>
<td>60</td>
<td>580</td>
<td>100</td>
<td>230</td>
<td>420</td>
<td>1,150</td>
<td>170</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Drainage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Scuppers</td>
<td>EACH</td>
<td>14</td>
<td>4</td>
<td>13</td>
<td>2</td>
<td>58</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Downspouts (12’ Diam.)</td>
<td>LF</td>
<td>600</td>
<td>80</td>
<td>400</td>
<td>24</td>
<td>700</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Overhead Pipe (12” Diam.)</td>
<td>LF</td>
<td>250</td>
<td>330</td>
<td>210</td>
<td>600</td>
<td>1,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Overhead Pipe (16” Diam.)</td>
<td>LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>9</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>20</td>
<td>4</td>
<td>12</td>
<td>5</td>
<td>30</td>
<td>39</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Misc. Ramp/Approach Items</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Restore Asphalt Paving Blocks (1.5” Thick)</td>
<td>SF</td>
<td>700</td>
<td>16,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Re-Point Masonry Walls</td>
<td>SF</td>
<td>300</td>
<td>1,450</td>
<td>6,250</td>
<td>800</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Pedestrian Fencing</td>
<td>SF</td>
<td>125</td>
<td>9,500</td>
<td>2,000</td>
<td>8,000</td>
<td>3,000</td>
<td>3,500</td>
<td>900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>100</td>
<td>1,000</td>
<td>300</td>
<td>1,200</td>
<td>520</td>
<td>3,150</td>
<td>1,300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Lattice Structure, Remove / Reinstall</td>
<td>LS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Misc. Bus Canopy Items</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15a</td>
<td>Brick Masonry Wall</td>
<td>SY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15b</td>
<td>Steel grating w/ Aluminum Lattice Covering</td>
<td>SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,270</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bus Canopy / Automatic Doors / Vestibule/ Lifting Hook</td>
<td>SEE BUS CANOPY ESTIMATE &amp; PLANS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Misc. Pedestrian Bridge Items</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>3 Ply Roofing on Concrete Slab</td>
<td>SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,800</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Stair Modifications</td>
<td>LS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System</td>
<td>SF</td>
<td>46,150</td>
<td>11,400</td>
<td>19,600</td>
<td>111,000</td>
<td>53,600</td>
<td>3,000</td>
<td>10,925</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*QUANTITIES NOT GENERATED FOR NEW BRIDGE - SEE SEPARATE ESTIMATE FOR SF AREA*

*QUANTITIES NOT GENERATED FOR NEW BRIDGE - SEE SEPARATE ESTIMATE FOR SF AREA*
## Preliminary Quantity Estimate for Ramp A (BIN 2270180)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>85</td>
<td>Assume (65' + 50) x 30' x 8&quot;</td>
</tr>
<tr>
<td>1b</td>
<td>Parapet Removal</td>
<td>LF</td>
<td>135</td>
<td>65 ft on Bridge + 50 ft on approach (North side only)</td>
</tr>
<tr>
<td>1c</td>
<td>Beam Removal 1,2</td>
<td>EA</td>
<td>4</td>
<td>Assume each is 60' long</td>
</tr>
<tr>
<td>3</td>
<td>Temporary Shielding</td>
<td>SF</td>
<td>2,500</td>
<td>6.0 ft added to both sides of the deck</td>
</tr>
</tbody>
</table>

### EXISTING BRIDGE REMOVAL

### PROPOSED BRIDGE RECONSTRUCTION

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a</td>
<td>Deck &amp; Sidewalk Concrete</td>
<td>CY</td>
<td>60</td>
<td>Assume 65' x 30' x 10&quot; (Class HP if CIP)</td>
</tr>
<tr>
<td>4b</td>
<td>Concrete - Approach Slab</td>
<td>CY</td>
<td>30</td>
<td>Assume both sides</td>
</tr>
<tr>
<td>4d</td>
<td>Concrete Traffic Barrier</td>
<td>LF</td>
<td>135</td>
<td>65 ft on Bridge + 50 ft on approach (North side only)</td>
</tr>
<tr>
<td>4e</td>
<td>Overlay</td>
<td>CY</td>
<td>None</td>
<td>One Course Composite Concrete deck</td>
</tr>
</tbody>
</table>

Reinforcing Steel

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5a</td>
<td>Epoxy Coated Reinforcing Steel</td>
<td>LBS</td>
<td>7,300</td>
<td>2% of Total Concrete Weight (No stainless)</td>
</tr>
</tbody>
</table>

Concrete (Repair)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6c</td>
<td>Pedestal Reconstruction</td>
<td>EA</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>6d</td>
<td>Substructure Repair (w/o steel exp)</td>
<td>SF</td>
<td>200</td>
<td>15 % of Exposed Area of Substructure</td>
</tr>
<tr>
<td>6e</td>
<td>Substructure Repair (w/ steel exp)</td>
<td>SF</td>
<td>100</td>
<td>7.5 % of Exposed Area of Substructure</td>
</tr>
</tbody>
</table>

Structural Steel

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7a</td>
<td>Beams 3</td>
<td>LBS</td>
<td>54,600</td>
<td>Assumed 4 - 30&quot; deep beams (200 lbs/ft)</td>
</tr>
<tr>
<td>7c</td>
<td>Bearing Replacement</td>
<td>EA</td>
<td>8</td>
<td>East and West Abutments</td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

Misc. Ramp/Approach Items

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>14a</td>
<td>Restore Asphalt Paving Blocks (1.5” thick)</td>
<td>SF</td>
<td>700</td>
<td>On west approach</td>
</tr>
<tr>
<td>14c</td>
<td>Pedestrian Fencing</td>
<td>LF</td>
<td>125</td>
<td>Assume straight fencing (SS wire mesh) on north fascia</td>
</tr>
<tr>
<td>14d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>100</td>
<td>Assume south curb along plaza will need to be replaced</td>
</tr>
</tbody>
</table>

Notes:

1) Temporary utility relocation will be required prior to north fascia beam removal
2) May need to do something to hold back fill over tunnel during superstructure removal
3) Quantities based on steel beams / CIP deck but could be concrete beams or pre-fab deck/beam system
### Preliminary Quantity Estimate for Ramp B (BIN 2269770)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>1,800</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Steel Parapet</td>
<td>LF</td>
<td>1,900</td>
<td></td>
</tr>
<tr>
<td>2c</td>
<td>Stairs to Ped Bridge</td>
<td>LBS</td>
<td>14</td>
<td>Qty included with Ped Bridge</td>
</tr>
<tr>
<td>2d</td>
<td>Drainage Scuppers</td>
<td>EA</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Downspouts</td>
<td>LF</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misc Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>9</td>
<td>Remove, store and reinstall</td>
</tr>
<tr>
<td></td>
<td>Underdeck Units</td>
<td>EA</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lattice Structure</td>
<td>LS</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Temporary Shielding</td>
<td>SF</td>
<td>66,000</td>
<td>6 ft width is added to the both sides of the deck</td>
</tr>
</tbody>
</table>

### PROPOSED BRIDGE RECONSTRUCTION

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Concrete</td>
<td>CY</td>
<td>2,200</td>
<td>Assumed new deck to be 10&quot; thick (extra cover for one course deck) - Unit price to consider difficult staging / pouring / casting conditions</td>
</tr>
<tr>
<td>4a</td>
<td>Deck &amp; Sidewalk Concrete</td>
<td>CY</td>
<td>2,200</td>
<td></td>
</tr>
<tr>
<td>4c</td>
<td>Concrete Pedestrian Parapet</td>
<td>LF</td>
<td>1,000</td>
<td>S. Fascia</td>
</tr>
<tr>
<td>4d</td>
<td>Concrete Traffic Barrier</td>
<td>LF</td>
<td>900</td>
<td>N. Fascia</td>
</tr>
<tr>
<td>4e</td>
<td>Overlay</td>
<td>CY</td>
<td>None</td>
<td>One Course Composite Concrete deck</td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td>LBS</td>
<td>180,000</td>
<td>2% of Total Concrete Weight</td>
</tr>
<tr>
<td>5a</td>
<td>Epoxy Coated Steel</td>
<td>LBS</td>
<td>180,000</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6c</td>
<td>Pedestal Reconstruction</td>
<td>EA</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>6d</td>
<td>Substructure Repair (w/o steel exp)</td>
<td>SF</td>
<td>250</td>
<td>20 % of Exposed Area of Substructure</td>
</tr>
<tr>
<td>6e</td>
<td>Substructure Repair (w/ steel exp)</td>
<td>SF</td>
<td>125</td>
<td>10 % of Exposed Area of Substructure</td>
</tr>
<tr>
<td>7</td>
<td>Structural Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7c</td>
<td>Bearing Replacement</td>
<td>EA</td>
<td>7</td>
<td>At West Abutment</td>
</tr>
<tr>
<td>7d</td>
<td>Shear Studs</td>
<td>EA</td>
<td>63,000</td>
<td>Assumed new shear studs on all stringers / girders and cap beams</td>
</tr>
<tr>
<td>8</td>
<td>Structural Steel (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a</td>
<td>Type A - Replace F/F Fascia Conn. Angle</td>
<td>EA</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>8b</td>
<td>Type B - Refurbish Sliding Stringer Conn.</td>
<td>EA</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>8c</td>
<td>Type C - Replace Slotted Conn. Angle</td>
<td>EA</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel(^1,^2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9a</td>
<td>Superstructure (Lead Abatement)</td>
<td>SF</td>
<td>150,000</td>
<td>Diaphragms W12, Stringer W36, and Column Caps W36 section; 15% added for uncounted Diaphragms; 15% added to total framing plan for Stiffeners &amp; Connections</td>
</tr>
<tr>
<td>9b</td>
<td>Columns (Lead Abatement)</td>
<td>SF</td>
<td>34,600</td>
<td>Column as W21 and Channel as MC18; There are 44 columns and the average height is taken as 29 ft; 10% added to total column and channel surface area. Plus column bracing @ Piers 14 thru 19.</td>
</tr>
<tr>
<td>10</td>
<td>Painting Existing Steel(^3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a</td>
<td>Superstructure</td>
<td>SF</td>
<td>150,000</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10b</td>
<td>Columns</td>
<td>SF</td>
<td>34,600</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>580</td>
<td></td>
</tr>
</tbody>
</table>
### Preliminary Quantity Estimate for Ramp B (BIN 2269770)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>Scuppers</td>
<td>EA</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>12b</td>
<td>Downspouts</td>
<td>LF</td>
<td>600</td>
<td>Assumed average length of pipe is about 40 ft. @ each scupper / all</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>downspouts to be 12&quot; diameter</td>
</tr>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>9</td>
<td>Assume all new units + wiring</td>
</tr>
<tr>
<td>b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>20</td>
<td>Assume all new units + wiring</td>
</tr>
<tr>
<td></td>
<td>Misc. Ramp/Approach Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14a</td>
<td>Restore Asphalt Paving Blocks (1.5&quot; thick)</td>
<td>SF</td>
<td>16,000</td>
<td>Assume sidewalk pavers to be restored - new sidewalk width to taper</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to accommodate Existing Lattice Structure</td>
</tr>
<tr>
<td>14b</td>
<td>Repoint Masonry Block Walls</td>
<td>SF</td>
<td>300</td>
<td>West Approach</td>
</tr>
<tr>
<td>14c</td>
<td>Pedestrian Fencing</td>
<td>SF</td>
<td>9,500</td>
<td>Straight fencing on north fascia and curved top on south fascia (1x1 SS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>wire mesh)</td>
</tr>
<tr>
<td>14d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>1,000</td>
<td>Along south curbline</td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System</td>
<td>SF</td>
<td>46,150</td>
<td>Spans over the parking lot</td>
</tr>
</tbody>
</table>

**Notes:**

1. No separate quantity for containment system. SF Area basically same as temp shielding. Could assume higher price for temp shielding to be used as containment system.
2. Column steel quantity shown separately since unit cost will need to reflect limited clearance to tracks. Class 1A Containment will be difficult if not impossible near tracks (likely this will be done using hand tools w/ vacuum attachments).
3. For breakdown by Paint Systems see Exhibit I - Cleaning and Painting Requirements.
## Preliminary Quantity Estimate for Ramp C (BIN 2269780)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING BRIDGE REMOVAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>290</td>
<td>Complete deck removal</td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Steel Barrier Removal</td>
<td>LF</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>Drainage Scuppers</td>
<td>EA</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Downspouts</td>
<td>LF</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Misc Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3c</td>
<td>Temporary Shielding</td>
<td>SF</td>
<td>11,400</td>
<td>6 ft added to the both sides of the deck</td>
</tr>
<tr>
<td><strong>PROPOSED BRIDGE RECONSTRUCTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a</td>
<td>Deck &amp; Sidewalk Concrete</td>
<td>CY</td>
<td>335</td>
<td>Full Width Deck Reconstruction (Assume 10&quot; thick slab) / Sdwk on S. Fascia</td>
</tr>
<tr>
<td>4c</td>
<td>Concrete Pedestrian Parapet</td>
<td>LF</td>
<td>200</td>
<td>South Fascia</td>
</tr>
<tr>
<td>4d</td>
<td>Concrete Traffic Barrier</td>
<td>LF</td>
<td>200</td>
<td>North Fascia</td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Epoxy Coated Reinforcing</td>
<td>LBS</td>
<td>27,200</td>
<td>2% of Total Concrete Weight</td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6a</td>
<td>Pedestal Reconstruction</td>
<td>EA</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>6b</td>
<td>Substructure (w/o exp steel)</td>
<td>SF</td>
<td>225</td>
<td>15% of Exposed Area of Substructute</td>
</tr>
<tr>
<td>6c</td>
<td>Substructure (w/ exp steel)</td>
<td>SF</td>
<td>150</td>
<td>10% of Exposed Area of Substructute</td>
</tr>
<tr>
<td>7</td>
<td>Structural Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7a</td>
<td>Bearing Replacement</td>
<td>EA</td>
<td>17</td>
<td>At East and West Abutments</td>
</tr>
<tr>
<td>7b</td>
<td>Shear Studs</td>
<td>EA</td>
<td>3,650</td>
<td>Assumed 25% of exsisting studs damaged during deck removal plus new studs on fascia girders</td>
</tr>
<tr>
<td>8</td>
<td>Structural Steel (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a</td>
<td>Type A - Replace F/F Fascia Conn. Angle</td>
<td>EA</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9a</td>
<td>Superstructure (Lead Abatement)</td>
<td>SF</td>
<td>26,900</td>
<td>Diaphragms W12, Stringer W36, and Column Cap as W36 section; 15% added for uncounted Diaphragms; 15% added to total framing plan for Stiffeners &amp; Connections</td>
</tr>
<tr>
<td>9b</td>
<td>Columns (Lead Abatement)</td>
<td>SF</td>
<td>800</td>
<td>Column as W21 and Channel as MC18. There are total 4 columns (2 columns as average height of 12 ft and the other 2 columns as 18 ft); 10% added to total column and channel surface area</td>
</tr>
<tr>
<td>10</td>
<td>Painting Existing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a</td>
<td>Superstructure</td>
<td>SF</td>
<td>26,900</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10b</td>
<td>Columns</td>
<td>SF</td>
<td>800</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>Scuppers</td>
<td>EA</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>12b</td>
<td>Downspouts</td>
<td>LF</td>
<td>80</td>
<td>Assumed average length of pipe is about 20 ft. @ each scupper / all downspouts to be 12&quot; diam.</td>
</tr>
</tbody>
</table>
## Preliminary Quantity Estimate for Ramp C (BIN 2269780)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12c</td>
<td>Overhead Pipe (12&quot; Diam.)</td>
<td>LF</td>
<td>250</td>
<td>Overhead pipe to carry stormwater overhead across tracks until you get beyond tracks then drop down to tie into new underground system</td>
</tr>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>2</td>
<td>Assume all new units + wiring</td>
</tr>
<tr>
<td>b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>4</td>
<td>Assume all new units + wiring</td>
</tr>
<tr>
<td>14</td>
<td>Misc. Ramp Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14b</td>
<td>Repoint Masonry Block Walls</td>
<td>SF</td>
<td>1,450</td>
<td>West Abutment</td>
</tr>
<tr>
<td>14c</td>
<td>Pedestrian Fencing</td>
<td>SF</td>
<td>2,000</td>
<td>Straight fencing on north fascia and curved top on south fascia (1x1 SS wire mesh)</td>
</tr>
<tr>
<td>14d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>300</td>
<td>Along south curbline on bridge and all four approach corners</td>
</tr>
</tbody>
</table>

**Notes:**

1) No separate quantity for containment system. SF Area basically same as temp shielding. Could assume higher price for temp shielding to be used as containment system.

2) Column steel quantity shown separately since unit cost will need to reflect limited clearance to tracks.
   
   Class 1A Containment will be difficult if not impossible near tracks (likely this will be done using hand tools with vacuum attachments).

3) For breakdown by Paint Systems see Exhibit I - Cleaning and Painting Requirements.
# Preliminary Quantity Estimate for Ramp D (BIN 2269730)

## Existing Bridge Removal

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>630</td>
<td>Complete deck removal</td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Steel Barrier Removal</td>
<td>LF</td>
<td>None</td>
<td>Fascia girder is the barrier.</td>
</tr>
<tr>
<td>2d</td>
<td>Drainage Scuppers</td>
<td>EA</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Downspouts</td>
<td>LF</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misc Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Underdeck Units</td>
<td>EA</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Temporary Shielding</td>
<td>SFT</td>
<td>29,000</td>
<td>6 ft added to the both sides of the deck</td>
</tr>
</tbody>
</table>

## Proposed Bridge Reconstruction

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a</td>
<td>Deck &amp; Sidewalk Concrete</td>
<td>CY</td>
<td>950</td>
<td>Full Width Deck Reconstruction (Assume 10&quot; thick slab) / Sdwk on both N. &amp; S. Fascia</td>
</tr>
<tr>
<td>4c</td>
<td>Concrete Pedestrian Parapet</td>
<td>LF</td>
<td>0</td>
<td>No concrete parapet - fence to be mounted directly on top of fascia girder.</td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Epoxy Coated Steel</td>
<td>LBS</td>
<td>76,400</td>
<td>2% of Total Concrete Weight</td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6c</td>
<td>Pedestal Reconstruction</td>
<td>EA</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>6d</td>
<td>Substructure (w/o exp steel)</td>
<td>SF</td>
<td>200</td>
<td>10 % of Exposed Area of Substructure</td>
</tr>
<tr>
<td>6e</td>
<td>Substructure (w/ exp steel)</td>
<td>SF</td>
<td>200</td>
<td>10 % of Exposed Area of Substructure</td>
</tr>
<tr>
<td>7</td>
<td>Structural Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7c</td>
<td>Bearing Replacement</td>
<td>EA</td>
<td>17</td>
<td>East and West Abutments - access difficult at west abutment- very deep bridge seat</td>
</tr>
<tr>
<td>7d</td>
<td>Shear Studs</td>
<td>EA</td>
<td>7,800</td>
<td>Assumed 25% of existing studs damaged during deck removal</td>
</tr>
<tr>
<td>8</td>
<td>Structural Steel (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a</td>
<td>Type A - Replace F/F Fascia Conn. Angle</td>
<td>EA</td>
<td>6</td>
<td>Potentially more involved then on Ramp B &amp; C due to full ht fascia</td>
</tr>
<tr>
<td>8b</td>
<td>Type B - Refurbich Sliding Stringer Conn.</td>
<td>EA</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>8c</td>
<td>Type C - Replace Slotted Conn. Angle</td>
<td>EA</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>8d</td>
<td>Type D - Diaphragm Replacement</td>
<td>EA</td>
<td>9</td>
<td>One location definite but assume possibly eight more locations</td>
</tr>
<tr>
<td>8e</td>
<td>Type E - Supplemental Plating</td>
<td>EA</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8f</td>
<td>Type F - Fascia Flange Repair</td>
<td>EA</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel(^1,2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9a</td>
<td>Superstructure (Lead Abatement)</td>
<td>SF</td>
<td>73,800</td>
<td>Diaphragms W18, Stringe W36, and Column Caps W36 section; 15% added for uncounted Diaphragms; 15% added to total framing plan for Stiffeners &amp; Connections</td>
</tr>
<tr>
<td>9b</td>
<td>Columns (Lead Abatement)</td>
<td>SF</td>
<td>4,700</td>
<td>Column as W21 and Channel as MC18; There are 18 columns and the average height is taken as 19 ft; 10% added to total column and channel surface area</td>
</tr>
<tr>
<td>10</td>
<td>Painting Existing Steel(^3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a</td>
<td>Superstructure</td>
<td>SF</td>
<td>73,800</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10b</td>
<td>Columns</td>
<td>SF</td>
<td>4,700</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Preliminary Quantity Estimate for Ramp D (BIN 2269730)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12a</td>
<td>Scuppers</td>
<td>EA</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>12b</td>
<td>Downspouts</td>
<td>LF</td>
<td>400</td>
<td>Assumed average length of pipe is about 25 ft. @ each scupper / all downspouts to be 12&quot; diam.</td>
</tr>
<tr>
<td>12c</td>
<td>Overhead Pipe (12&quot; Diam.)</td>
<td>LF</td>
<td>330</td>
<td>Overhead pipe to carry stormwater overhead across tracks until you get beyond tracks then drop down to tie into new underground system</td>
</tr>
</tbody>
</table>
## Preliminary Quantity Estimate for Ramp D (BIN 2269730)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>3</td>
<td>Assume new units + wiring</td>
</tr>
<tr>
<td>b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>12</td>
<td>Assume new units + wiring</td>
</tr>
<tr>
<td>14</td>
<td>Misc. Ramp / Approach Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14b</td>
<td>Repoint Masonry Block Walls</td>
<td>SF</td>
<td>6,250</td>
<td>At West, East Approach &amp; Retaining walls</td>
</tr>
<tr>
<td>14c</td>
<td>Pedestrian Fencing</td>
<td>SF</td>
<td>8,050</td>
<td>Curved top fencing mounted on both fascias (1x1 SS wire mesh)</td>
</tr>
<tr>
<td>14d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>1,200</td>
<td>Along both curblines on bridge and all four approach corners</td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System</td>
<td>SF</td>
<td>11,400</td>
<td>Spans over the road and walkway</td>
</tr>
</tbody>
</table>

**Notes:**

1) No separate quantity for containment system. SF Area basically same as temp shielding. Could assume higher price for temp shielding to be used as containment system.

2) Column steel quantity shown separately since unit cost will need to reflect limited clearance to tracks.

Class 1A Containment will be difficult if not impossible near tracks (likely this will be done using hand tools w/ vacuum attachments).

3) For breakdown by Paint Systems see Exhibit I - Cleaning and Painting Requirements.
### Existing Bridge Removal

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>540</td>
<td>Includes portion near Ramp B where there is only the single structural slab and in the bus lanes when not over the terminal.</td>
</tr>
<tr>
<td>1d</td>
<td>Concrete Overlay</td>
<td>CY</td>
<td>460</td>
<td>This is removal of the lightweight slab over the terminal</td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Steel Barrier Removal</td>
<td>LF</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>Drainage Scuppers</td>
<td>EA</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Downspouts</td>
<td>LF</td>
<td>225</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misc Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Underdeck Units</td>
<td>EA</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Temporary Shielding</td>
<td>SF</td>
<td>38,000</td>
<td>6 ft width added to plan area where there is a single slab</td>
</tr>
</tbody>
</table>

### Proposed Bridge Reconstruction

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a</td>
<td>Deck &amp; Sidewalk Concrete</td>
<td>CY</td>
<td>610</td>
<td>Reconstitution of single slab deck - assumed 10&quot; thick &amp; 8 inch thick deck reconstruction under overlay</td>
</tr>
<tr>
<td>4d</td>
<td>Concrete Traffic Barrier</td>
<td>LF</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>4e</td>
<td>Concrete Overlay</td>
<td>CY</td>
<td>560</td>
<td>Light wt conc. protective slab over the terminal - assume 8&quot; thick</td>
</tr>
<tr>
<td>4f</td>
<td>Waterproofing Membrane</td>
<td>SY</td>
<td>3,000</td>
<td>Assume you will need between two slabs (same as existing)</td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Epoxy Coated Steel</td>
<td>LBS</td>
<td>72,000</td>
<td>2% of normal weight concrete and 1% of light weight of concrete</td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6a</td>
<td>Deck (w/o exp steel)</td>
<td>SF</td>
<td>2,800</td>
<td>10 % of Deck Area</td>
</tr>
<tr>
<td>6b</td>
<td>Deck (w/exp steel)</td>
<td>SF</td>
<td>1,500</td>
<td>5 % of Deck Area</td>
</tr>
<tr>
<td>6d</td>
<td>Substructure (w/o exp steel)</td>
<td>SF</td>
<td>500</td>
<td>Assume some misc encasement repair on columns &amp; underside of bus/terminal ped ramps</td>
</tr>
<tr>
<td>6e</td>
<td>Substructure (w/ exp steel)</td>
<td>SF</td>
<td>500</td>
<td>Assume some misc encasement repair on columns &amp; underside of bus/terminal ped ramps</td>
</tr>
<tr>
<td>7</td>
<td>Structural Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7d</td>
<td>Shear Studs</td>
<td>EA</td>
<td>9,000</td>
<td>Assumed 25% of existing studs damaged during deck removal</td>
</tr>
<tr>
<td>8</td>
<td>Structural Steel (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a</td>
<td>Type A - Replace F/F Fascia Conn. Angle</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>8d</td>
<td>Type D - Stringer / Diaphragm Replacement</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>8e</td>
<td>Type E - Supplemental Plating</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel1,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9a</td>
<td>Superstructure (Lead Abatement)</td>
<td>SF</td>
<td>153,000</td>
<td>2.48 sf/sf framing plan area; 15% added to total framing plan for Stiffeners &amp; Connections</td>
</tr>
<tr>
<td>9b</td>
<td>Columns (Lead Abatement)</td>
<td>SF</td>
<td>28,500</td>
<td>Column as W14; 98 columns and the average height is taken as 30 ft; 10% added to total column surface area</td>
</tr>
<tr>
<td>9c</td>
<td>Canopy over RR Platforms (Lead Abatement)</td>
<td>SF</td>
<td>3,000</td>
<td>Platforms 9/10 and 11/12</td>
</tr>
</tbody>
</table>
## Preliminary Quantity Estimate for Bus Station North (BIN 2269740)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Painting Existing Steel&lt;sup&gt;a&lt;/sup&gt;</td>
<td>SF</td>
<td>153,000</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10a</td>
<td>Superstructure</td>
<td>SF</td>
<td>28,500</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10b</td>
<td>Columns</td>
<td>SF</td>
<td>3,000</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10c</td>
<td>Canopy over RR Platforms</td>
<td>SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>170</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>Scuppers</td>
<td>EA</td>
<td>17</td>
<td>12 ft. at 17 locations - all pipes to be 12&quot; diameter</td>
</tr>
<tr>
<td>12b</td>
<td>Downspouts</td>
<td>LF</td>
<td>225</td>
<td></td>
</tr>
<tr>
<td>12c</td>
<td>Overhead Pipe (12&quot; Diam.)</td>
<td>LF</td>
<td></td>
<td>Quantity included with Bus Station South</td>
</tr>
<tr>
<td>12d</td>
<td>Overhead Pipe (16&quot; Diam.)</td>
<td>LF</td>
<td></td>
<td>Quantity included with Bus Station South</td>
</tr>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>13b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Misc. Ramp Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14c</td>
<td>Pedestrian Fencing</td>
<td>SF</td>
<td>900</td>
<td>Straight fencing, barrier mounted south fascia (1x1 SS wire mesh)</td>
</tr>
<tr>
<td>14d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>1,300</td>
<td>Perimeter of four bus platforms and curb in taxi lane &amp; east curb</td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System</td>
<td>SF</td>
<td>53,600</td>
<td>Spans over platform and employee parking lot</td>
</tr>
</tbody>
</table>

**Notes:**

1) No separate quantity for containment system. SF Area basically same as temp shielding. Could assume higher price for temp shielding to be used as containment system.

2) Column steel quantity shown separately since unit cost will need to reflect limited clearance to tracks.
   Class 1A Containment will be difficult if not impossible near tracks (likely this will be done using hand tools w/ vacuum attachments).

3) For breakdown by Paint Systems see Exhibit I - Cleaning and Painting Requirements.
# Preliminary Quantity Estimate for Bus Station South (BIN 2269750)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING BRIDGE REMOVAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>3,870</td>
<td>Deck Thickness = 9 in., Bus Platform = 8 in. on top of deck (New pedestrian plaza area to the north is to remain)</td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Steel Barrier Removal</td>
<td>LF</td>
<td>610</td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>Drainage Scuppers</td>
<td>EA</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Downspouts</td>
<td>LF</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misc Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Underdeck Units</td>
<td>EA</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Bus Canopy Removal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Brick Masonry Walls</strong></td>
<td>SY</td>
<td>1,630</td>
<td>Salvaged bricks may be reused for masonry reconstruction</td>
</tr>
<tr>
<td>3</td>
<td>Temporary Shielding</td>
<td>SF</td>
<td>131,300</td>
<td>6 ft width added to framing plan (technically don't need shielding under ped plaza area but you will need containment)</td>
</tr>
<tr>
<td><strong>PROPOSED BRIDGE RECONSTRUCTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a</td>
<td>Deck &amp; Bus Platform Concrete</td>
<td>CY</td>
<td>4,320</td>
<td>Staged deck replacement one bus lane at a time</td>
</tr>
<tr>
<td>4d</td>
<td>Concrete Traffic Barrier</td>
<td>LF</td>
<td>610</td>
<td></td>
</tr>
<tr>
<td>4e</td>
<td>Overlay</td>
<td>CY</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Epoxy Coated Steel</td>
<td>LBS</td>
<td>350,000</td>
<td>2% of Total Concrete Weight</td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6d</td>
<td>Substructure (w/o exp steel)</td>
<td>SF</td>
<td>100</td>
<td>Assume some misc repair on column bases</td>
</tr>
<tr>
<td>6e</td>
<td>Substructure (w/ exp steel)</td>
<td>SF</td>
<td>100</td>
<td>Assume some misc repair on column bases</td>
</tr>
<tr>
<td>7</td>
<td>Structural Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7d</td>
<td>Shear Studs</td>
<td>EA</td>
<td>18,200</td>
<td>Assumed 25% of existing studs damaged during deck removal and additional new studs for deck reconstruction</td>
</tr>
<tr>
<td>8</td>
<td>Structural Steel (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a</td>
<td>Type A - Replace F/F Fascia Conn. Angle</td>
<td>EA</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>8d</td>
<td>Type D - Diaphragm Replacement</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8e</td>
<td>Type E - Supplemental Plating</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel1,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9a</td>
<td>Superstructure (Lead Abatement)</td>
<td>SF</td>
<td>363,500</td>
<td>Typical Horizontal Framing Plan consists Girders, stringers W36 and W18X; 15% added to total framing plan for Stiffeners &amp; Connections</td>
</tr>
<tr>
<td>9b</td>
<td>Columns (Lead Abatement)</td>
<td>SF</td>
<td>35,000</td>
<td>Column as W14; 120 columns and the average height is taken as 30 ft; 10% added to total column surface area</td>
</tr>
<tr>
<td>9c</td>
<td>Bus Canopy (Lead Abatement)</td>
<td>SF</td>
<td>64,000</td>
<td>Steel Framing &amp; Utility Supports</td>
</tr>
<tr>
<td>10</td>
<td>Painting Existing Steel3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a</td>
<td>Superstructure</td>
<td>SF</td>
<td>363,500</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10b</td>
<td>Columns</td>
<td>SF</td>
<td>35,000</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10c</td>
<td>Bus Canopy Framing</td>
<td>SF</td>
<td>64,000</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>1,150</td>
<td></td>
</tr>
</tbody>
</table>
### Preliminary Quantity Estimate for Bus Station South (BIN 2269750)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>Scuppers</td>
<td>EA</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>12b</td>
<td>Downspouts</td>
<td>LF</td>
<td>700</td>
<td>Assume for now same as existing but w/ 12” diameter pipe</td>
</tr>
<tr>
<td>12c</td>
<td>Overhead Pipe (12” Diam.)</td>
<td>LF</td>
<td>600</td>
<td>Overhead pipe to carry stormwater overhead across tracks until you</td>
</tr>
<tr>
<td>12d</td>
<td>Overhead Pipe (16” Diam.)</td>
<td>LF</td>
<td>1,200</td>
<td>get beyond tracks then drop down to tie into new underground</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>system</td>
</tr>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>5</td>
<td>Assume new units + wiring</td>
</tr>
<tr>
<td>13b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>30</td>
<td>Assume new units + wiring</td>
</tr>
<tr>
<td>14</td>
<td>Misc. Ramp / Approach Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14c</td>
<td>Pedestrian Fencing</td>
<td>SF</td>
<td>3,500</td>
<td>Straight fencing barrier mounted all south and west fascias (1x1 SS</td>
</tr>
<tr>
<td>14d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>3,150</td>
<td>wire mesh)</td>
</tr>
<tr>
<td>15</td>
<td>Misc. Bus Canopy Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15a</td>
<td>Brick Masonry Wall</td>
<td>SY</td>
<td>1,270</td>
<td></td>
</tr>
<tr>
<td>15b</td>
<td>Steel grating w/ Aluminum Lattice Covering</td>
<td>SF</td>
<td>3,200</td>
<td>See Bus Canopy Package Plans</td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System</td>
<td>SF</td>
<td>111,000</td>
<td>Spans over platforms</td>
</tr>
</tbody>
</table>

**Notes:**

1) No separate quantity for containment system. SF Area basically same as temp shielding. Could assume higher price for temp shielding to be used as containment system.

2) Column steel quantity shown separately since unit cost will need to reflect limited clearance to tracks.

   Class 1A Containment will be difficult if not impossible near tracks (likely this will be done using hand tools w/ vacuum attachments).

3) For breakdown by Paint Systems see Exhibit I - Cleaning and Painting Requirements.
### Preliminary Quantity Estimate for Bus Exit Ramp – Old Viaduct (BIN 2269790)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING BRIDGE REMOVAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>600</td>
<td>Not replacing recently reconstructed pedestrian plaza portion of the deck. Cross Girders: W shaped beam with 1.5&quot; cover, flange width as 1' 6&quot; and depth as 5'</td>
</tr>
<tr>
<td>1e</td>
<td>Superstructure Encasement</td>
<td>CY</td>
<td>900</td>
<td>Logitudinal Girders (including overhang): W shaped beam with 1.5&quot; cover; flange width as 1' 6&quot; and depth as 5&quot;. Overhangs with flange width as 11&quot;, depth as 14&quot; and length as ramp + sidewalk (140'+372')</td>
</tr>
<tr>
<td>1f</td>
<td>Column Encasement</td>
<td>CY</td>
<td>65</td>
<td>Steel column - 1.5&quot; cover on flange; flange width 16&quot; and depth 17&quot;; 19&quot; x 20&quot; area for 20 columns with average column height taken as 27'</td>
</tr>
<tr>
<td></td>
<td><strong>Total Encasement</strong></td>
<td>CY</td>
<td>965</td>
<td>Total includes 20% added for stiffeners, brackets and bracing</td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Steel Railing Removal</td>
<td>LF</td>
<td>330</td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>Drainage Scuppers</td>
<td>EA</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Downspouts</td>
<td>LF</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Misc Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>2</td>
<td>original roadway standards along south fascia to be removed</td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>5</td>
<td>new pedestrian light standards to be removed, stored and reinstalled</td>
</tr>
<tr>
<td></td>
<td>Underdeck Units</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Temporary Shielding</td>
<td>SFT</td>
<td>33,000</td>
<td>Including 6 ft added to the both sides of the deck</td>
</tr>
<tr>
<td><strong>PROPOSED BRIDGE RECONSTRUCTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a</td>
<td>Deck, Sidewalk &amp; Approach Slab Concrete</td>
<td>CY</td>
<td>600</td>
<td>Staged Construction (New pedestrian plaza area to remain)</td>
</tr>
<tr>
<td>4e</td>
<td>Overlay</td>
<td>CY</td>
<td>None</td>
<td>One Course Deck reconstruction</td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Epoxy Coated Bars</td>
<td>LBS</td>
<td>48,600</td>
<td>2% of Total Concrete Weight</td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Pedestal Reconstruction</td>
<td>EA</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Substructure (w/o exp steel)</td>
<td>SF</td>
<td>200</td>
<td>10% of Exposed Area of Substrucutre</td>
</tr>
<tr>
<td>e</td>
<td>Substructure (w/ exp steel)</td>
<td>SF</td>
<td>200</td>
<td>10% of Exposed Area of Substrucutre</td>
</tr>
<tr>
<td>7</td>
<td>Painting Existing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7b</td>
<td>Bridge Railing Four Rails (TL-4)</td>
<td>LF</td>
<td>330</td>
<td>Length of the ramp, plus extended towards 10' sidewalk and over R.R. tracks</td>
</tr>
<tr>
<td>7c</td>
<td>Bearing Replacement</td>
<td>EA</td>
<td>12</td>
<td>At West Abutment and Piers 3 and 5.</td>
</tr>
<tr>
<td>7d</td>
<td>Shear Studs</td>
<td>EA</td>
<td>2,700</td>
<td>Assumed 25% of existing studs damaged during deck removal plus new studs on fascia stringers</td>
</tr>
<tr>
<td>8</td>
<td>Structural Steel (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a</td>
<td>Superstructure (Isolated Areas of Lead Abatement)</td>
<td>SF</td>
<td>86,600</td>
<td>D/B Company to inspect and price out after encasement is off</td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9d</td>
<td>Superstructure (Isolated Areas of Lead Abatement)</td>
<td>SF</td>
<td>86,600</td>
<td>Floor Beam W27, Cross Girders and Logitudinal Girders W36 section, Overhangs as W14; 15% added to total Framing Plan for uncounted Brackets, Stiffeners, Bracing &amp; Connections</td>
</tr>
<tr>
<td>9e</td>
<td>Columns (Isolated Areas of Lead Abatement)</td>
<td>SF</td>
<td>4,900</td>
<td>Column as W14; 20 columns and the average height is taken as 27 ft; 10% added to total column surface area</td>
</tr>
<tr>
<td>10</td>
<td>Painting Existing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a</td>
<td>Superstructure</td>
<td>SF</td>
<td>86,600</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>10b</td>
<td>Columns</td>
<td>SF</td>
<td>4,900</td>
<td>Same quantity as removal</td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>420</td>
<td></td>
</tr>
</tbody>
</table>
Preliminary Quantity Estimate for Bus Exit Ramp – Old Viaduct (BIN 2269790)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>Scuppers</td>
<td>EA</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Downspouts</td>
<td>LF</td>
<td>24</td>
<td>Assumed 12.0 ft length of pipe at two locations - new pipe to be 12&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Diam.</td>
</tr>
<tr>
<td>12c</td>
<td>Overhead Pipe (12&quot; Diam.)</td>
<td>LF</td>
<td>210</td>
<td>Overhead pipe to carry stormwater overhead across tracks until you get</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>beyond tracks then drop down to tie into new underground system</td>
</tr>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>2</td>
<td>Assume new units s. fascia + wiring</td>
</tr>
<tr>
<td>b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>5</td>
<td>Assume new units + wiring</td>
</tr>
<tr>
<td>14</td>
<td>Misc. Ramp / Approach Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14b</td>
<td>Repoint Masonry Block Walls</td>
<td>SF</td>
<td>800</td>
<td>At West Abutment</td>
</tr>
<tr>
<td>14c</td>
<td>Pedestrian Fencing</td>
<td>SF</td>
<td>3,600</td>
<td>Curved top fencing barrier mounted on south and deck mounted on north</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>fascia (1x1 SS wire mesh)</td>
</tr>
<tr>
<td>14d</td>
<td>Steel Curbing</td>
<td>LF</td>
<td>520</td>
<td>Along both curblines on bridge and two west approach corners</td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System</td>
<td>SF</td>
<td>19,600</td>
<td>Span 1 and 4, 5, 6 and 7</td>
</tr>
</tbody>
</table>

Notes:
1) Until encasement is removed and structure is inspected level of structural steel repair is unknown.
2) Containment will be required for south column and east fascia beam of Bent 7 all other steel is assumed unpainted due to encasement.
3) For breakdown by Paint Systems see Exhibit I - Cleaning and Painting Requirements.
# Preliminary Quantity Estimate for Pedestrian Breezeway (BIN 2270170)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING BRIDGE REMOVAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal</td>
<td>CY</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>1h</td>
<td>Roof Slab Removal</td>
<td>CY</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2c</td>
<td>Stairs</td>
<td>LBS</td>
<td>24,000</td>
<td>Weight of stair is taken as 320 lbs/ft; Length of Stair = 72 ft</td>
</tr>
<tr>
<td></td>
<td>Misc Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bridge Mounted Lighting Standards</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Underdeck Units</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Temporary Shielding</td>
<td>SF</td>
<td>4,000</td>
<td>3 ft added to the both sides of walkway</td>
</tr>
<tr>
<td><strong>PROPOSED BRIDGE RECONSTRUCTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a</td>
<td>Deck &amp; Sidewalk Concrete</td>
<td>CY</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>4h</td>
<td>Roof Slab</td>
<td>CY</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Reinforcing Steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Epoxy Coated Steel</td>
<td>LBS</td>
<td>8,900</td>
<td>2% of Total Concrete Weight</td>
</tr>
<tr>
<td>6</td>
<td>Concrete (Repair)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6d</td>
<td>Substructure (w/o exp steel)</td>
<td>SF</td>
<td>30</td>
<td>Assume some encasement repair on column bases</td>
</tr>
<tr>
<td>6e</td>
<td>Substructure (w/ exp steel)</td>
<td>SF</td>
<td>30</td>
<td>Assume some encasement repair on column bases</td>
</tr>
<tr>
<td>9</td>
<td>Cleaning Existing Steel$^2$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9a</td>
<td>Superstructure (Lead Abatement)</td>
<td>SF</td>
<td>13,000</td>
<td></td>
</tr>
<tr>
<td>9b</td>
<td>Columns &amp; Stairs (Lead Abatement)</td>
<td>SF</td>
<td>2,500</td>
<td>Length of the stair - 50 ft</td>
</tr>
<tr>
<td>10</td>
<td>Painting Existing Steel$^3$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a</td>
<td>Superstructure</td>
<td>SF</td>
<td>13,000</td>
<td></td>
</tr>
<tr>
<td>10b</td>
<td>Columns &amp; Stairs</td>
<td>SF</td>
<td>2,500</td>
<td>Length of the stairs to drop-off area - 50 ft</td>
</tr>
<tr>
<td>11</td>
<td>Expansion Joints</td>
<td>LF</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13a</td>
<td>Bridge Mounted Units</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>13b</td>
<td>Underdeck Units</td>
<td>EA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Misc. Pedestrian Bridge Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16a</td>
<td>3 Ply Roofing</td>
<td>SF</td>
<td>4,800</td>
<td></td>
</tr>
<tr>
<td>16b</td>
<td>Stair Modifications</td>
<td>LS</td>
<td>1</td>
<td>Need to plate over hole left by stair removal</td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System</td>
<td>SF</td>
<td>3,000</td>
<td>Full Length of Bridge</td>
</tr>
</tbody>
</table>

**Notes:**

1) Pipe insulation under roof contains asbestos - see Asbestos Survey Report

2) No separate quantity for containment system. SF Area basically same as temp shielding. Could assume higher price for temp shielding to be used as containment system.

3) For breakdown by Paint Systems see Exhibit I - Cleaning and Painting Requirements.
## Preliminary Quantity Estimate for North Ramp (BIN 2269760)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EXISTING BRIDGE REMOVAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Deck/Sdwk/App Slab Removal CY</td>
<td>CY</td>
<td>520</td>
<td></td>
</tr>
<tr>
<td>1b</td>
<td>Barrier / Parapet LF</td>
<td>LF</td>
<td>600</td>
<td>Barrier on walls</td>
</tr>
<tr>
<td>1h</td>
<td>Concrete Overlay CY</td>
<td>CY</td>
<td>133</td>
<td>Asphalt overlay</td>
</tr>
<tr>
<td>1g</td>
<td>Substructure CY</td>
<td>CY</td>
<td>2,010</td>
<td>Abutment and Retaining Walls including Foundations - 1350 CY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Columns (Bents 1-8) including Foundations - 660 CY</td>
</tr>
<tr>
<td></td>
<td>Structural Steel Removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Steel Framing LBS</td>
<td>LBS</td>
<td>745,000</td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Steel Barrier / Parapet on Bridge LF</td>
<td>LF</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>Drainage Scuppers EA</td>
<td>EA</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>2e</td>
<td>Downspouts LF</td>
<td>LF</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misc Removal / Reconstruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>RR stair modifications LS</td>
<td>LS</td>
<td></td>
<td>Need to partially demo stairs and reconstruct over tracks to provide</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>clearance for new bridge.</td>
</tr>
<tr>
<td></td>
<td>Temporary Shielding SF</td>
<td>SF</td>
<td>4,400</td>
<td>Shielding required over Span 1 as a minimum for demolition over tracks.</td>
</tr>
<tr>
<td></td>
<td>PROPOSED BRIDGE RECONSTRUCTION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>APPROXIMATE AREA OF NEW RAMP SF</td>
<td>SF</td>
<td>19,000</td>
<td>Based on 36'-5&quot; out-to-out width and approximate length of 520'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Based on assumed area over restored parking lot and SIRTOA station.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Need for system may be eliminated if selected superstructure type does not provide surface for pigeons to roost.</td>
</tr>
<tr>
<td>17</td>
<td>Pigeon Deterrent System SF</td>
<td>SF</td>
<td>10,925</td>
<td>This is to include as a minimum reconstructing the top 2&quot; of the disturbed pavement during ramp construction, re-striping the lot and restoring disturbed landscaping. Work to be coordinated with and approved by EDC.</td>
</tr>
<tr>
<td>17</td>
<td>RESTORATION OF EDC LOT SF</td>
<td>SF</td>
<td>100,000</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. Substructure demolition is to consider cost of asbestos abatement for caulking material used at abutment wall joints. See Asbestos Report in Section 7 of Exhibit A for more information.
## Preliminary Quantity Estimate for North Muni Lot

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pavement Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4” Rolled Gravel Base</td>
<td>SF</td>
<td>35,000</td>
<td>Area of North Ramp demo is approximately 20,000 SF plus 10% repair area for existing lot say 15,000 SF</td>
</tr>
<tr>
<td></td>
<td>2” Bituminous Concrete Surface Course</td>
<td>SF</td>
<td>170,000</td>
<td>Area of North Ramp demo is approximately 20,000 SF plus existing lot say 150,000 SF</td>
</tr>
<tr>
<td></td>
<td>Striping</td>
<td>LF</td>
<td>30,000</td>
<td>Assume 600 spaces at 50 LF/space</td>
</tr>
<tr>
<td></td>
<td>Security Fencing</td>
<td>LF</td>
<td>300</td>
<td>Assume need to fence in area of where North Ramp retaining wall is to be removed</td>
</tr>
<tr>
<td></td>
<td>Site Lighting</td>
<td>EA</td>
<td>4</td>
<td>Assume the 4 lighting fixtures currently mounted on existing North Ramp would need to be replaced with ground mounted units.</td>
</tr>
<tr>
<td></td>
<td>Site Drainage</td>
<td></td>
<td></td>
<td>To be determined if additional collection points are needed to drain pavement area created by demo of North Ramp.</td>
</tr>
</tbody>
</table>

**Note:**
1. Company to coordinate with Bureau of Parking for new lot layout. Assume work is to be done in three stages in order to maintain a minimum of 300 parking spaces during construction.
## Preliminary Quantity Estimate for BUS CANOPY (Bus Station North & South)

<table>
<thead>
<tr>
<th>INDEX</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>EXISTING REMOVAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brick Masonry Wall</td>
<td>CY</td>
<td></td>
<td>Quantity Included under Bus Station South</td>
</tr>
<tr>
<td></td>
<td>Roofing Material</td>
<td>SF</td>
<td>54,000</td>
<td>Assume concrete roof slab to remain</td>
</tr>
<tr>
<td></td>
<td><strong>PROPOSED CONSTRUCTION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bus Canopy Architectural</td>
<td>SY</td>
<td></td>
<td>Quantity Included under Bus Station South</td>
</tr>
<tr>
<td></td>
<td>Brick Masonry Wall</td>
<td>SY</td>
<td></td>
<td>Quantity Included under Bus Station South</td>
</tr>
<tr>
<td></td>
<td>Steel grating w/ Aluminim Lattice Covering</td>
<td>SF</td>
<td></td>
<td>Quantity Included under Bus Station South</td>
</tr>
<tr>
<td></td>
<td>Cleaning / Painting Existing Steel</td>
<td>SF</td>
<td></td>
<td>Quantity Included under Bus Station South</td>
</tr>
<tr>
<td></td>
<td>Painting of concrete roof soffit</td>
<td>SF</td>
<td>54,000</td>
<td>Painting underside &amp; all exposed surfaces of concrete roof slab</td>
</tr>
<tr>
<td></td>
<td>3 Ply Roof Reconstruction</td>
<td>SF</td>
<td>54,000</td>
<td>At top of each bus ped ramp</td>
</tr>
<tr>
<td></td>
<td>Galvanized Steel Pipe Rail</td>
<td>LF</td>
<td>48</td>
<td>Handicap Signs (Wall and Pole Mounted)</td>
</tr>
<tr>
<td></td>
<td>Canopy Signage</td>
<td>EA</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Bus Canopy Electrical</strong></td>
<td>EA</td>
<td>41</td>
<td>As per Detail in Canopy Package Contract (BCE-0 to BCE-4)</td>
</tr>
<tr>
<td></td>
<td>Roof Mounted Floodlights</td>
<td>EA</td>
<td>117</td>
<td>As per Detail in Canopy Package Contract (BCE-0 to BCE-4)</td>
</tr>
<tr>
<td></td>
<td>Holding Lights in Bus Lanes</td>
<td>LS</td>
<td>1</td>
<td>As per direction of NYCT-Surface Operations</td>
</tr>
<tr>
<td></td>
<td>PA System Upgrade</td>
<td>LS</td>
<td>1</td>
<td>As per direction of NYCT-Surface Operations</td>
</tr>
<tr>
<td></td>
<td><strong>Vestibule</strong></td>
<td>LS</td>
<td>1</td>
<td>As Details in Canopy Package Contract</td>
</tr>
<tr>
<td></td>
<td>Mechanical, Electrical Power, Plumbing &amp; Fire Protection Work</td>
<td>LS</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
### ESTIMATED QUANTITIES (DRAINAGE SYSTEM)

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Description</th>
<th>Units</th>
<th>Quantities</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>16 Inch Dia Underground RC Drainage Pipe</td>
<td>LF</td>
<td>1800</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>18 Inch Dia Underground RC Drainage Pipe</td>
<td>LF</td>
<td>2250</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>24 Inch Dia Underground RC Drainage Pipe</td>
<td>LF</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Catch basins</td>
<td>EA</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trench Drains</td>
<td>LF</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manholes</td>
<td>EA</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>EXISTING OUTFALLS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>24 Inch Dia.</td>
<td>EA</td>
<td>3</td>
<td>Existing Locations</td>
</tr>
<tr>
<td>16</td>
<td>16 Inch Dia.</td>
<td>EA</td>
<td>1</td>
<td>Existing Locations</td>
</tr>
<tr>
<td>15</td>
<td>15 Inch Dia.</td>
<td>EA</td>
<td>1</td>
<td>Existing Locations</td>
</tr>
<tr>
<td>12</td>
<td>12 Inch Dia.</td>
<td>EA</td>
<td>2</td>
<td>Existing Locations</td>
</tr>
<tr>
<td>6</td>
<td>6 Inch Dia.</td>
<td>EA</td>
<td>1</td>
<td>Existing Locations</td>
</tr>
</tbody>
</table>

**Notes:**

1. This table is based on replacing existing underground drainage system in kind. Exception is for horizontal pipe runs under tracks. For these areas pipes would have to be run over tracks (attached to beams) and then drop down once pipe is past SIR ROW. Estimated quantities for overhead pipe are included in individual bridge estimates.

2 Replacment of Existing Outfalls is not considered part of the scope of this contract.
EXHIBIT F
MAINTENANCE AND PROTECTION
OF TRAFFIC STIPULATIONS

NOTE: The Company must fully comply with the traffic stipulations provided by NYCDOT OCMC, NYCDOT Traffic Operations, NYCDOT Bureau of Parking, NYCDOT Passenger Transport Division and MTA-New York City Transit – Surface Operations. Failure to do so may deem the proposal as being non-responsive.
MAINTENANCE AND PROTECTION OF TRAFFIC STIPULATIONS

General Criteria for Maintaining Bus Traffic during Construction

1. A minimum of one 15’-0” wide lane of entering and exiting bus traffic must be maintained at all times throughout the duration of the project.

2. For periods of construction where only a single lane is provided, the Company must provide on-site 24 hour emergency towing services in the event there is a breakdown in the single lane.

3. The Company must stage deck replacement work at the bus station in such a manner as to provide 24 hour access to four bus ramp lanes. This requirement is in effect at all times throughout the duration of the contract.

4. Access to the Dispatcher’s Tower must be maintained throughout deck replacement work at the bus station unless alternate provisions are made and agreed upon by NYCT-Surface Operations.

5. To facilitate staged deck replacement of Bus Station North and South, taxi and delivery vehicles currently utilizing the northern most station ramp shall be detoured to alternate locations within the Terminal.

6. Pick-up and Drop-Off Areas for taxis may be temporarily relocated to the North Municipal Parking Field. A proposed temporary location plan is given in Section 2 of Exhibit E – Scope of Work, in Book 2: Volume 2.

7. The Company’s proposed method of MPT and construction staging must be reviewed and approved by MTA- New York City Transit-Surface Operations prior to commencing any work on the bus ramps.

8. The Company can pursue the option of providing a temporary structure(s) or widening an existing Structure(s) to re-route exiting/entering bus traffic to facilitate deck replacement work on Ramp B (BIN 2269770) or the Old Viaduct (BIN 2269790).

General Criteria for Maintaining All other Vehicular Traffic within the Terminal Area during Construction

1. For ramps not carrying bus traffic, temporary construction lanes can be reduced to 11’-0”.

2. Detouring of traffic on Ramps A (BIN2269760), C (BIN 2269780), D (BIN 2269730) and the North Ramp (BIN 2269760) may be considered provided the Company can prove to the satisfaction of NYCDOT that alternate routes have the capacity to handle the volume of detoured traffic.
3. The use of Ramp A (Borough Place) to carry public traffic will not be permitted. Currently this Ramp is signed for AUTHORIZED VEHICLES ONLY and sees very limited use by employees working in the Ferry Maintenance Building (approx. 18 vehicles at the peak hour). Due to poor geometry and site distance, NYCDOT – Traffic considers this intersection to be unsafe to handle traffic volumes greater than what it currently carries. Therefore MPT strategies shall not consider Ramp A as a viable detour option for Ramps C and D. Proposals that do not comply with this criterion will be deemed non-responsive.

4. In the event, the Company’s proposed scheme for replacing the existing deck on Ramp B calls for staged construction using cast-in-place concrete, the pouring operations must be conducted at night with the Ramp closed to all traffic. The Company will be responsible for developing an alternate scheme to accommodate bus operations. Potential strategies include but are not limited to utilizing the Old Viaduct (existing Bus Exit) to accommodate two way traffic or relocating passenger pick-up/drop-off along Richmond Terrace or elsewhere within the Terminal.

Proposers are encouraged to discuss their proposed scheme with MTA – NYCT Bus Operations prior to submitting Technical Proposals.

5. Work restrictions will apply for two hours before a SI Yankee home game (or similar stadium event) to two hours after the game when the performance of that work will directly impact stadium users. For example construction activities that produce excessive noise, dust, etc. or will impede safe access to the stadium will be prohibited during this period. Work that has no such impact can proceed as planned.

6. Construction signs shall be posted on all affected roadways. The Company must include in their price proposal the cost of 3VMS signs for the duration of the construction activities. Actual location of the VMS will be determined upon submission of MPT plans and in coordination with NYCDOT.

7. For any emergency that forces the Company to close a lane(s) during a time outside of the approved MPT hours, the Company must obtain OCMC approval prior to implementing such lane closure, and the Situation Room must also be notified.

      OCMC phone number:  (212) 442-9839
      Situation Room phone number:  (212) 442-7090

**General Criteria for Maintaining Vehicular Traffic on Richmond Terrace**

1. For purposes of delivering material, temporary storage and facilitating construction of the ramps the Company can take one lane adjacent to the curb from the hours of 7 PM to 6 AM.

2. If milling and paving operations are to be performed on Richmond Terrace, the Company is permitted to take lanes between the hours of 9 PM and 5 AM provided one travel lane in each direction is maintained during these hours.
General Criteria for Maintaining On-Site Parking

1. Temporary relocation of Municipal Parking on Ramp C (BIN 2269780) and in the North and South Parking Fields must be coordinated with NYCDOT Parking Bureau.

2. The milling and re-surfacing of bituminous concrete pavement in the North Municipal Parking Field shall be staged to maintain a minimum of 300 parking spaces at all times.

3. There are currently 232 parking spaces including 10 handicap spaces in the EDC stadium parking lot. For the restoration of the EDC parking lot, the construction methods and sequence are to be such that no more than 47 parking spots are lost during the times that games or events are taking place. During all other times, no more than 116 parking spots are to be affected. In addition, no loss of parking space at the EDC parking lot is to occur simultaneously with loss of parking space at the North Municipal lot.

4. Temporary relocation of parking on and under Ramp D (BIN 2269730) and under Bus Station North and South (BIN 2269740 and 2260750) must be coordinated with NYCDOT Passenger Transport Division.

5. The Company will not be responsible for furnishing alternate spaces for employees currently parking on the existing ramps.

6. The Company shall contact the NYPD - 120 Precinct regarding illegal parking on the North Ramp (BIN 2269760). Direct line: (718) 876-8500.

7. It is understood by all parties that temporary loss of some parking spaces is inevitable during the execution of this work. However, Proposers shall consider and will be evaluated on the impact their chosen staging sequence and method of construction will have on the overall availability of parking at the site throughout the execution of this contract.

General Criteria for Maintaining Pedestrian Traffic in the Terminal

In general, it is not necessary to maintain a sidewalk during ramp reconstruction if safe, sufficient pedestrian access can be provided on an adjacent structure.

A ramp by ramp breakdown of sidewalk maintenance requirements is as follows:

The sidewalk on Ramp A (BIN 2270180) does not need to be maintained during its reconstruction but pedestrian access through the plaza immediately south of the bridge must be maintained at all times.
The sidewalk on Ramp B (BIN 2269770) does not need to be maintained during its reconstruction provided safe pedestrian access is provided on Ramp C (BIN 2269780).

Pedestrian access on Ramp C (BIN 2269780) does not need to be maintained during its reconstruction provided safe pedestrian access is provided on Ramp B (BIN 2269770).

Pedestrian access on Ramp D (BIN 2269730) does not need to be maintained during its reconstruction provided safe pedestrian access is provided on either Ramp B (BIN 2269770) or Ramp C (BIN 2269780).

Sidewalk access should be maintained on at least one side of the Bus Exit Ramp - Old Viaduct (BIN 2269790) during its reconstruction.

Sidewalk access does not need to be maintained on the existing North Ramp (BIN 2269760) during bridge replacement work provided it can be safely relocated to the stadium walkway north of the bridge.

Temporary pedestrian walkways are to be a minimum of 5 feet wide.
EXHIBIT G
RAILROAD REQUIREMENTS
This Exhibit consists of the following three sections that outline the requirements for Railroad related work on this contract.

SECTION 1 – EXECUTION OF WORK
The information contained in this Section outlines how work is to be conducted with NYCT – Outside Projects and Staten Island Railway (SIRTOA). Specifically this Section discusses the procedures for working on or above the tracks and the use of Authority Supplied Services that are to be furnished through the Force Account Agreement established between NYCDOT and the Authority for this Contract.

The Force Account Agreement is being finalized and registration is anticipated prior to award of the Design-Build Contract.

SECTION 2 - PROCEDURES FOR WORKING ON SIRTOA’S ROW
This Section contains additional requirements specific to working at the St. George Station of the Staten Island Railway.

SECTION 3 - INSURANCE REQUIREMENTS FOR NYCT “OUTSIDE” PROJECTS
The information contained in this Section summarizes the standard insurance requirements for projects performed on NYCT or their subsidiaries’ property on behalf of a third party. The only insurance policy that needs to be written specifically for New York City Transit, where they are the Named Insured, is the Railroad Protective Liability Insurance. All other policies they are to be named as Additional Insured.

Policy limits are to be as indicated in Schedule A, Book 1 – Administrative Requirements.
SECTION 1

EXECUTION OF WORK
1.0 Abbreviations

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

“Railroad” shall mean the Staten Island Rapid Transit Authority (SIRTOA)

“Authority” shall mean the New York City Transit Authority (NYCT)

"City" shall mean the City of New York

“Resident Engineer” shall mean the City’s representative for the project

“Contractor” shall mean the Design-Build Company

1.1 General Conduct of Work

a. Conduct the work by methods and procedures subject to the approval of NYCT, SIRTOA and Resident Engineer and to the conditions imposed hereunder, in the most expeditious manner possible, having the utmost regard for the safety of persons and property, and making all reasonable effort to minimize any inconvenience to the public.

b. Propose working methods and schedules for all work in and around the Railroad, in accordance with the provisions herein specified and referred, for the approval of the Authority. Such methods and schedules shall allow for the safe and continuous operation of the Railroad, without any interruption of service or change in regular schedules of train operation, except as may be hereinafter specified.

c. The Authority may issue access passes to the Contractor's authorized personnel so that they may enter the System in order to perform the work of the Contract. The passes shall be used only when necessary for the performance of the work of the Contract and shall not be used for travel between an employee's home and the Work Site. The Contractor will be responsible for proper use of the access passes and will be charged for, any misuse or loss of access passes. The Contractor shall request passes in advance of need. New passes will not be issued until expired passes are returned.

1.2 Work Affecting the Railroad

1.2.1 General Requirements

a. The Railroad is in use and will be in continuous operation during the performance of the Work hereunder. It is anticipated that the Work under this Contract will, except as provided in the Force Account Agreement, be done without interruption of or change in the regular schedule of operations of trains on the Railroad. No work shall be done on or affecting the Railroad until the Contractor has secured written permission to proceed from the Authority.

b. At all times comply with the requirements of the Contract Documents as to the disposal and handling of materials, placing of lights, use of scaffolding, shields and other structures, and with all other requirements for the purpose of avoiding interference with the safe and
continuous operations of the Railroad and of avoiding interference with or injury to
customers and employees of the Railroad or other persons.

c. At all times while working on or adjacent to tracks, the Contractor, Subcontractors and all of
their employees shall closely observe the applicable flagging rules and all other applicable
rules and regulations of the Authority. The Resident Engineer and the Contractor must meet
with the Railroad upon Notice to Proceed and obtain one copy of each of the Authority's
"rules and regulations" which include but are not limited to MTA, NYCT Maintenance of
Way Safety Rules and Regulations for the Divisions of Track, Electrical Systems, Signals
and Infrastructure and “New York City Transit Authority Safety Rules (MW-2)” and the
current issue of Authority's "Schedule of Rates for Services Rendered to Outside Parties". It
is the Contractor’s responsibility to ensure that all of its employees and employees of its
Subcontractors are familiar with the contents thereof (including the latest revisions and
additions) and that these employees shall so conduct themselves as not to violate any of such
flagging safety rules and regulations.

d. During the performance of work on or adjacent to operating tracks, employees of the
Contractor or its Subcontractors will not be permitted to wear reflective clothing, or to apply
any reflecting substance to their clothing, tools, or other equipment, the predominant color
of which conflicts with colors in use in the operational procedures of the Authority.
Additionally all employees of the Contractor or its Subcontractors must wear NYCT
approved safety vests at all times while on SIRTOA property.

e. For a period of about one month of each year, from Thanksgiving Day through New Years
Day, permission may not be granted for any operation which will cause interference with the
normal operating schedule of the Railroad.

f. Work will not be permitted on SIRTOA’s Right-of-Way during Staten Island Yankee home
games. Except in limited circumstances work may be permitted in specific areas at the
direction of the SIRTOA. Work / outage restrictions go into effect from 2 hours before a
game until 2 hours after a game.

g. This Contract will run concurrently with other Contracts or Authority work. Scheduling of
diversions shall be coordinated at all times. Due to conflicts, work under this Contract can be
temporarily suspended by the Authority or there can be an impact on the ability to obtain service
diversions.

h. All work is subject to immediate suspension at any time in the event of service emergencies,
special events or excessive delays to customer service. Community, City, State or national
events may also impact or require temporary suspension of work under this Contract.

i. The Authority reserves the right to cancel all scheduled Authority Services when Cold
Weather or Snow Weather Plans are implemented.

j. Review of and reconciliation of certain Authority supplied services is described in
Paragraph 1.2.11.

k. Where scaffolds / equipment are installed in subway tunnels or anywhere along SIRTOA’s
right of way, it shall comply with strict clearance requirements to avoid contact with moving
trains. Trains may hit scaffolds / equipment that is installed within the clearance limits
declared and shown on equipment clearance limit diagrams provided in Section 2 of this
Exhibit. Measurements shall be taken to verify that the scaffolds / equipment installation is
outside the defined clearance limits. Document installed scaffolds / equipment is outside the defined clearance limits by listing measurements. Submit measurement methodology for approval prior to starting the work. One method is as follows:

At selected locations, establish an insulated and leveled plane across the tracks. Reference the plane to the top of the rail. Locate a laser measuring device, Hilti PD10, or approved equal, on the plane and pointed perpendicular to the plane in the direction of the scaffolds / equipment. Take a reading to obtain the height of the scaffolds / equipment. Measure the horizontal distance of the laser beam to the gauge of the track and the horizontal distance of the laser beam to the scaffolds / equipment. Evaluate track condition by measuring the rail thickness, the rail height, rail curvature in the case of crossovers or curved track and the super elevation in the case of curved tracks.

1.2.2 Employment of Flaggers.

a. If, by reason of the Contractor's operations, it is found necessary to employ flaggers in order to protect employees or personnel of the Authority or the Contractor, or others engaged in work on or adjacent to the tracks and/or to ensure the safe conduct of traffic on the Railroad, the Contractor shall submit a written request for the approval of the Authority, using the current Flagging Request Form and Track Diagrams outlining work area, by Monday at 10:00 A.M. for the week beginning at 5:00 A.M. the following Monday to permit the Authority to analyze said request(s) and make such arrangements as are necessary for the stationing of such employees. Similarly, three (3) business days advance notice, in writing, shall be given when canceling previously ordered flaggers. Canceling flaggers with less than the required three (3) business days advance notice will result in billing of such services to NYCDOT through the Force Account Agreement. NYCDOT will then deduct the same amount from the Design-Build Contractor’s invoice payments and in addition the cost to provide again for the originally cancelled services will be re-paid to NYCDOT by the Design-Build Contractor through payment reduction. The furnishing of such employees shall not relieve the Contractor of its responsibility for the performance of this Contract as herein elsewhere provided; nor shall it relieve the Contractor of its responsibility or liability for personal injuries (including death), or property damages to any customer, person or employee of the Contractor, Subcontractor, or of any of the parties designated as INDEMNIFIED PARTIES, or of any other person, for which it is responsible pursuant to the provisions of this Agreement.

b. The Contractor shall schedule its work so as to make the best use of the flaggers furnished by the Authority. All requests for such services shall be written and submitted for a Monday through Sunday period on the prescribed Flagging Request Form, and include details of the work to be performed, areas to be occupied, equipment to be utilized, labor force to be assigned, the date and hours of the proposed work and details of the need for a relief shift and overtime. The Authority reserves the right to determine the number of flaggers or other employees necessary or if a diversion of service would be more efficient, based on the details of the Contractor's work plan submittal. Disagreement on the number of flaggers required and decision to position of flaggers will be resolved by the Authority’s Construction Flagging Coordinator or his designated representative.
1.2.3 Work Near Contact Rails.

a. The existing contact rails (3rd rails) on the site of and in the vicinity of the Project are live and used for the transmission of electricity at approximately 600 volts D.C. Work under this Contract will be performed while the contact rails are live, unless otherwise requested by the Contractor and approved by the Railroad. Such requests will not be considered except during the allowable hours of work detailed in Paragraph 1.2.4. All such requests shall be submitted at least 3 weeks in advance using the current “Service Diversion Request” form. The Contractor shall not shut off or turn on contact (third) rail power under any circumstances. Power off and power on operations will be conducted by SIRTOA’s 3rd Rail personnel only.

b. The Contractor is to provide for the duration of each work shift, contact rail (3rd rail) annunciator alarm boxes with a strobe light and audible alarm for each section of rail or adjacent track(s) in active work areas where power is shut-off. The alarm boxes will be installed and removed by SIRTOA’s 3rd Rail Department and said boxes will become the property of SIRTOA after completion of the project. The annunciator alarm boxes shall be capable of monitoring the contact rail during the outage periods and providing an audible and visual alarm when power is restored to the contact rail. Annunciator alarm boxes with a strobe light shall be spaced not greater than 500 feet within all active work areas and not greater than 1000 feet on tracks used to approach active work areas. The audible alarm shall be an intermittent alarm with frequency in the range of 1 to 2 kHZ and a sound level in the range of 90dBA at 3 feet. Closer spacing will be required to compensate for reduced audibility when noisy equipment is in use. Approved annunciator alarm boxes include: 1) model number WSAD-NY, manufactured by J. McDermott Corp., Ridgewood, NY (718-456-3606); 2) model number PN-10512, manufactured by Appalachian Electrical Instrumental, Inc., West Virginia (800-206-0022); 3) model number C-308, manufactured by Christy Electronics, Inc., West Babylon, NY (973-890-9775); 4) or approved equal.

1.2.4 Allowable Hours of Work.

a. Permissible hours of work under traffic without a diversion of service (with flaggers).
   1. The Contractor shall, in order to reduce to a minimum any interference with the convenient, safe and free use of the train platforms, passageways, stairways and other portions of the Railroad for customer traffic, perform the work affecting such portions, including the transportation of materials in and out of the Project Site, at such hours of the day and night as the Resident Engineer may direct. It is contemplated that the Contractor may perform such particular work under traffic with flagging protection without suspension of train operations or removal of power during the following hours:
      Weekday (Monday to Friday) - 9am to 3pm
      Weeknight (Monday to Thursday) - 9pm to 4am
      Weekend – Friday at 9 pm to Monday at 4am
   2. All work hours listed in Paragraph 1 above include time needed to set-up and remove flags. The flags will be set up and removed during the hours listed in Paragraph 1.
   3. Work outside the hours set forth in Paragraph 1 above is prohibited.
   4. Work under traffic is expressly prohibited from 0600 to 0900 and 1500 to 1900 "weekdays".
b. Permissible hours of work with a diversion of service.
   1. Permissible hours of work with a diversion of service, are as shown in paragraph 1.2.10 "Schedule of Authority Supplied Services and Weighted Costs".

c. It is understood that the hours stated in Paragraphs 1.2.4.a and 1.2.4.b above are approximate only and are not to be taken as final as they are subject to change by the Authority and shall form no basis for any claim in case they do not correspond with the hours finally determined by the Resident Engineer.

1.2.5 Diversions of Train Service.

a. When the performance of a portion of the work will interfere with the normal operation of the Railroad, the Contractor may request diversion of train service. The Authority will issue a document known as a Special Operations (S.O.) to restrict the use of a track in various ways or to change the normal operation of the Railroad. The S.O. will identify the approved hours of work which includes all time needed to set-up and clear-up the tracks. Request for a diversion without buses must be submitted at least three (3) weeks in advance. In order to provide continuous service to Authority customers a request for diversion that requires buses shall be submitted at least eight (8) weeks in advance. The request shall be submitted in the prescribed “Service Diversion Request” form. The use of flaggers, work trains and other Authority services are subject to separate provisions of this Contract. During such approved diversions, the Contractor shall perform that portion of the work which would otherwise interfere with the normal operation of the Railroad. Plan and prosecute the work as to ensure no interference with the resumption of normal operations at the end of the approved period.

b. All work, including clear-up and removals necessary to allow restoration of service shall be completed within the times stipulated on the S.O. At such times the DOT’s Resident Engineer along with SIRTOA personnel will perform an inspection, and return the tracks to the SIR Control Center for resumption to normal service. The Authority will return all tracks to the SIR Control Center as detailed on each Special Operation. The Authority may order the proposed schedule of work curtailed at any time, should such action be deemed necessary to ensure prompt restoration of normal service. In the event that the Contractor delays the restoration of scheduled service on the Railroad beyond the time specified in the Special Operations, charges will be made as specified in the Authority's "Schedule of Rates for Services Rendered to Outside Parties" in effect at the time the services are performed will be charged against the Force Account Agreement with the City and re-paid to NYCDOT by means of a payment reduction to the Design-Build Contractor.

c. The estimated number of occasions of diversions of service and type of diversion the Authority will provide to perform the Work under this Contract are as shown in Paragraph 1.2.10

1.2.6 Use of a Work Train.

a. In connection with the work to be performed, the Contractor may request the use of a work train. Any such request shall be in the prescribed “Request for Work Train” form, and shall indicate the make-up and any specialized equipment of such trains, the approximate amounts and types of plant and material to be transported, and the number of round trips required. Such requests must be made at least six weeks in advance. All such transportation
will be done under the supervision of the Authority. Contractor shall comply with NYCT yard security procedures in effect at the time of loading and unloading. All loading and unloading on to and off NYCT work trains shall be done by the Contractor, using its own equipment and personnel, under the supervision of the Authority, at such times as directed by the Authority. The Contractor shall unload and clean the work train upon return to the yard, except if the flat cars remain assigned to him on succeeding days. The Contractor shall absolve the City and the Authority for all loss due to failure to furnish transportation, or due to breakdowns of transportation equipment, and for all loss or breakage or other damage to the Contractor's equipment, apparatus, or material, in transportation; nor shall the City nor the Authority be liable for such losses as may occur by reason of the failure to deliver equipment or material at the site of the work at designated times, irrespective of the cause of said losses, breakage, damage, failure to deliver or otherwise, and irrespective of the negligence and carelessness of the City or the Authority. The Contractor shall pay the City or the Authority for all damages to the equipment and structures of the Railroad or Authority property arising out of the transportation of plant or materials. The Contractor's Safety Engineer shall inspect each work train prior to leaving the yard and prior to leaving the work site.

b. In the event that the Contractor requires the use of a crane on any Authority supplied work train, all costs in connection with the crane and crane operator shall be borne by the Contractor. Any crane and crane operator the Contractor proposes to use on any work train shall be subject to the approval of the Authority with the concurrence of the Railroad. Should the Contractor request the use of the Authority's crane and crane operator, and they are available, the Contractor shall pay the Authority for actual costs and prevailing overhead rates in accordance with the Authority's "Schedule of Rates for Services Rendered to Outside Parties", in effect at the time the services are performed.

c. If the Contractor requires modifications or additions to a work train in order to prosecute the work (e.g. mounting of steel structures, cable reels, work platforms, etc.) the Contractor shall submit to the Authority a detailed drawing of the cross section of the modified work train at its most extreme profile. This cross section shall fall within the limits of the clearance envelope as specified in Section 2 of this Exhibit. The Authority will return the Contractor’s drawing, as approved by Car Equipment Engineering & Technical Support, Division of Car Equipment, to the Contractor. The Contractor shall provide a certification to the Authority that any modification or addition made to the work train is in accordance with the approved drawing. No such modified work train shall be used until written approval of the Authority is provided to the Contractor.

If the Contractor supplies its own flat cars, all costs associated with the transfer of the flat cars between Rail Yards shall be borne by the Contractor.

d. All contractor/vendor hi-rail equipment is subject to inspection and approval by SIRTOA prior to permission to be used on the tracks. This equipment will also require a SIRTOA pilot to direct all hi-rail personnel operating the equipment and will accompany them at all times. A mechanic for the hi-rail equipment is required at the work location in the event of the hi-rail equipment needing repairs. SIRTOA reserves the right to revoke said approval at any time.

e. The use of work trains is not anticipated for this Contract.
1.2.7 Cancellation of Diversions and Work Trains.

   a. Written requests by the Contractor to cancel previously requested diversions of service and work trains must be received by the Authority in a sufficient time. Written cancellation requests must be received by the Resident Engineer as follows:

   1. Diversions:

      At least three business days in advance of the scheduled starting time of such diversion of service. If bus service is required, at least seven business days in advance of the scheduled starting time of the diversion of service.

   2. Work Trains:

      At least three business days in advance of the scheduled starting time of the work train.

   b. Diversions and work trains canceled by the Contractor with less than the required notice as stated above, will be billed to NYCDOT through the Force Account Agreement, NYCDOT will in turn withhold the same amount from payment to the Contractor as well as the cost to re-schedule such services.

      The “additional cost to re-schedule” a previously cancelled outage refers to just the cost of the newly scheduled services. Should the Contractor cancel any Authority supplied services with less than the required notice as stated above then the Contractor will be charged the cost of the original cancelled service plus the cost of the newly scheduled service through a payment deduction.

1.2.8 Flaggers.

1.2.8.1 Flagger Requirements

   a. Subject to the requirements and conditions set forth in this Section of Exhibit G, the Authority will furnish from the date of Notice of the Award of Contract to the completion of the Contract the number of flagger-day occasions required to perform the work. The estimated number of flagger-day occasions is as shown in Paragraph 1.2.10.

   b. The Contractor must provide the Authority with a projection of flagger requirements based on a projection of work for all activities, in writing, three months in advance to allow for sufficient flaggers to be available. The projection shall be updated and submitted by the first working day of every month and shall be based on the approved schedule.

1.2.8.2 Flagger Rules

   a. The Authority will furnish the Contractor with one copy each (at the construction Kick-off meeting) of the following documents:

      • SIR Book of Operation Rules and Safety Rules
      • New York City Transit Authority Rules and Regulations
      • MTA, NYCT Maintenance of Way Safety Rules and Regulations for Divisions of Track, Electrical Systems, Signals and Infrastructure
New York City Transit Authority Safety Rules (MW-2)

Schedules of rates for Services Rendered to Outside Parties

SIR Track Access Form (TAF)

b. The Contractor shall be responsible to ensure that all employees and employees of subcontractors are familiar with the contents of the Authority’s and SIRTOA’s rules and regulations (including the latest revisions and additions) and that these employees shall so conduct themselves as not to violate any of the rules and regulations.

c. In addition to the rules and regulations included on the document specified in Paragraph a. above, and the SIR Operating Rule Book and Safety Rule Book, flaggers shall be required as follows:

1. One flagger on the tracks to cover the approach of work trains during diversions of service and at all times when work trains are passing through the work zones.

2. One flagger to accompany each roving or stationary crew of workers on tangent track (up to 300’-0”) and at least one additional flagger if crew is more than 300’-0” apart on curved track. A crew of workers may consist of one or more persons.

3. Flaggers are required for all work performed on station platforms.

4. Flaggers shall accompany each work crew working on an inactive track which is adjacent to an active track whether power is on or off.

5. Flaggers are required at all times when working upon or adjacent to the Right of Way and on or near tracks except as follows:

- Flagging protection will not be required when working below the tracks provided no part of any worker, tools or piece of equipment encroaches upon the Right of Way and the personnel working under the Right of Way are protected by netting and hard hats.

- The right of Way for elevated structures is defined as the area above the bottom of the ties and between the handrails on either side of the tracks.

6. Whenever work on a protected track requires men to be working at separate points that one flagger cannot safely hear, see, warn, or protect all persons so engaged, one or more intermediate flaggers must be stationed at suitable successive points within that area. Each flagger must have a clear view of the flaggers adjacent to him and the first flagger encountered by trains must have a clear view of the flags or lamps to protect the various groups of workers.

7. Closer spacing of flaggers is required to compensate for reduced audibility of flagger’s whistle when noisy equipment is in use.
8. The track is considered closed when all points of rail access is blocked in an approved manner. Under no circumstances shall access to the closed track be gained by way of the active tracks during the hours when flagging in non-permissible.

d. To reduce flagger usage to a minimum, the Contractor shall furnish and install approved barricades, barricaded scaffolds and safety railings. Baker Scaffolds shall be furnished and installed on SIRTOA locations in accordance with NYCT Safety Bulletin 2001(latest revision). Barricades, scaffolds and safety railing arrangements shall be approved by the Authority and SIRTOA.

1.2.8.3 Flagger Account

a. Flaggers are required to protect the Contractor's and Authority's personnel involved in Contract related activities on or near the tracks where power is either on or off. Contract activities requiring flaggers include but are not limited to: surveys, construction work, test trains, work trains, diversions of service and inspections.

Subject to the requirements and conditions set forth in this Section of Exhibit G, the Authority will furnish, except as hereinafter provided, from the date of Notice of the Award of Contract to the completion of Contract the number of flagger-day occasions required to perform the work. The estimated number of flagger-day occasions is as shown in paragraph 1.2.10.

This total number of flagger-day occasions of flaggers to be so furnished is hereinafter referred to as the “Flagger Account”. Paragraph 1.2.8.4 defines flagger-day occasion.

Following is a listing of the flagger requirements charged to the Force Account. This listing is not intended to be all inclusive of the flagger requirements which may be charged to the Flagger Account for this Project.

1. Flaggers are required for all work performed on station platforms.

2. Flaggers are required when working on or under tracks regardless of whether the work is below an active or inactive track which is adjacent to an active track whether power is on or off. Flags OR lamps will be posted in advance of the work site as well as the "green resume" past the site. The flaggers will then station themselves at the location for the protection of personnel as well as property. The allowable hours of stationing flaggers are the same as those contained in sub-paragraph 6 below.

3. Each roving and stationary crew of workers requires a minimum of two (2) flaggers on tangent track and at least one additional flagger on curved track. A "crew of workers" may consist of one or more persons.

4. Whenever work on a protected track requires men to be working at separate points in such a manner that one (1) flagger cannot safely see, warn, or protect all persons so engaged, including due to excessive noise, one or more intermediate flaggers must be stationed at suitable successive points within that area so that each flagger has a clear view of the flagger adjacent to him and the first flagger encountered by trains has a clear view of the lamps (flags) to protect the various groups of workers.

5. Closer spacing of flaggers may be required to compensate for reduced audibility of flagger's whistle when noisy equipment is in use.
The allowable hours for stationing flaggers are the same as those outlined in subparagraph 6 below. This requirement will apply both to work below an active track or to work below an inactive track which is adjacent to an active track with power on or off.

6. A track is considered closed when all points of rail access are blocked in an approved manner including bumpers and blocked and clamped switches with trips. For a closed track which is adjacent to an active track, construction activities shall proceed only where the required flaggers are provided as specified. The hours during which flaggers may be stationed are limited to the "permissible hours of work without diversion of service under flagging" or the "permissible hours of work with diversion of service" as shown in subparagraph 1.2.4.a and b. The use of approved continuous four (4)-foot high barricades between the closed and active tracks will permit contract work on the closed track to extend beyond the time limits specified and will reduce the required flagging on closed track to just one flagger per crew.

Under no circumstances shall access to closed track be gained by way of the active tracks during hours when flagging is non-permissible. Barricades shall be fabricated of approved fire retardant material and painted with approved "No Clearance" markings.

7. A crane boom crossing track(s) will require one flagger for each tangent track crossed and at least one additional flagger for each track which is curved.

1.2.8.4 Flagger Costs - Determining Hours and Occasions Used

a. In determining the Contractor's Flagger Account usage payable through the Force Account Agreement between the City and the Authority, the following rules will govern:

1. Flagger Cost - hours

   a. One flagging occasion is the use of one flagger for any eight hour period or portion thereof and includes time for a flagger to travel to and from flagger’s crew quarters.

   In the case of this project, the flagger’s crew quarters are located at St. George; so technically flaggers would be available at the site for a full 8 hour work shift. However the Company’s work will be limited to the Allowable Hours of Work described in Paragraph 1.2.4 which limits weekday work to a 6 hour shift (9am to 3pm) and weeknight work to a 7 hour shift (9pm to 4am).

   b. When work is performed on overtime, or work exceeds 8 hours, time-and-a-half shall be paid on excess time, exceeding 8 hours for that shift.

   c. A relief shift of flaggers may be brought in when scheduled flagger hours exceed 8 hours. This is determined by the SIRTOA Supervisor responsible for flagger assignments.

   d. Contractor shall provide the Authority with a projection of flagger requirements, in writing, three (3) months in advance to allow for sufficient flaggers to be available when required. Projection shall be updated by the first working day of every month.

   e. See paragraph 1.2.2(a) for time required for placing or canceling flagging orders.

2. Flagger Cost - determining number of occasions used.
a. To determine number of flagger-day occasions usage, all overtime charges shall be converted to a straight time 8-hour workday and equated to equivalent flagger "occasions."

b. Flagger cancellation by Contractor with less than the three (3) business days required notice, except for cases of inclement weather or outside emergencies, will cause flaggers to be billed to NYCDOT through the Force Account Agreement, NYCDOT will in turn withhold the same amount from payment to the Contractor as well as the cost to re-schedule such services.

c. Flaggers cancelled by the Authority or flaggers standing by for more than 3 hours per flagger shift due to the unscheduled cancellation by the Authority of a Special Operation or for the Authority not permitting work on or near a track heretofore approved, will not be charged to the Force Account between the City and the Authority or to the Contractor.

d. Direct and indirect fringe benefits and overhead costs, effective in the year flagger service is rendered, shall be applied to all actual flagger charges.

1.2.9 Disruption of Company’s Operations by NYCT

a. In the event the Company’s otherwise scheduled and approved work operations are disrupted by NYC Transit, the Company will be reimbursed for demonstrated losses incurred as a direct result of the NYC Transit ordered disruption. These reimbursement costs will be paid under the item “Allowance for NYCT Disruptions” and will apply to any entity of NYC Transit including but not limited to SIRTOA and Bus Operations.

1.2.10 Reallocation of Authority Supplied Services

a. The Contractor must meet with the City, the Authority and the Railroad upon Notice to Proceed and prior to site mobilization to identify the actual Force Account needs (i.e. number of flaggers, diversions, etc.) based on its proposed method of work and the Railroad’s operations. The Contractor will be permitted at a later time to request a reallocation of such anticipated services, however such request must be submitted at least six months in advance of the time the Contractor intends to use such services, and is subject to the sole discretion of the Authority to permit such reallocation according to the operational requirements of the system at the time the services would be needed. In the event such request is denied, Contractor is precluded from bringing any claims whatsoever relating to such denial. The Contractor shall also allow sufficient time for requesting the various services as provided in the Force Account Agreement. Based on the complexity of the requested reallocation, the request should be submitted sufficiently in advance of the six months in order to allow sufficient time for the Authority to analyze the request and make the necessary arrangements. The further in advance that such requests are submitted the greater the likelihood that they can be accommodated.

b. If acceptable to the Authority, such reallocation would involve obtaining the equivalent value of unused and not planned or needed occasions of one service and converting same to requested occasions of another service or services, provided that the total cost of all of the services, reallocated, does not exceed the total cost of the original allocation. In the event the Contractor needs services in addition to those originally envisioned and reflected in the Force Account Agreement between the City and the Authority, the Contractor must notify
the City and the Authority six months in advance of the need for such additional services. The additional services will be provided to the extent that Railroad operations can accommodate. The Contractor must provide the City with the total estimated Force Account cost for such additional services.

c. The Authority will endeavor to provide the reallocated number of occasions requested at the time the Contractor requests the various services subject to the requirements and lead times for requesting such services. The Contractor’s request will be evaluated based on the availability of services such as labor, track access and equipment. At the time the reallocated services are made available to the Contractor the reallocation request will be considered approved.

d. After a request by the Contractor for a reallocation of services has been made, and efforts on the part of the Authority to accommodate the request begun, the Contractor shall not be entitled to have the service allotment originally specified be provided. It is understood that the Contractor shall not be entitled to an extension of time and shall have no basis for asserting any claim in the event that the actual number of reallocated occasions permitted do not exactly correspond in kind with those requested.

e. In the event that the contractually designated services are not available as requested by the Contractor, the Authority reserves the right to exchange these with services that are available to mitigate project delay.

### SCHEDULE OF AUTHORITY SUPPLIED SERVICES

<table>
<thead>
<tr>
<th>TYPE OF AUTHORITY SUPPLIED SERVICE</th>
<th>PERMISSIBLE HOURS OF WORK</th>
<th>NUMBER OF OCCASIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-Hour Diversion</td>
<td>Daytime: 9am to 3pm</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>Nighttime: 9pm to 4am</td>
<td></td>
</tr>
<tr>
<td>55-Hour Diversion</td>
<td>Friday at 9:00 pm to</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Monday at 4:00am</td>
<td></td>
</tr>
<tr>
<td>Flagging (8 Hr shift)</td>
<td></td>
<td>600</td>
</tr>
</tbody>
</table>

Note: The hours listed above include time required to set-up and clear-up the tracks, as outlined in each Special Operation.

The number of occasion is an estimate based on assumed method and extent of work at the time of RFP preparation.

### 1.2.11 Reconciliation of Authority Supplied Services

a. The Contractor shall meet with the Resident Engineer, the City and the Railroad on a monthly basis to reconcile the usage of Authority Supplied Services (Diversions, Flagging and Work Trains. The purpose of this meeting shall be to review usage of each type of service and obtain concurrence on the Authority Supplied Services so used during the previous month and to date as well as to discuss any other Authority Supplied Services issues. While the Contractor is free to maintain contemporaneous records on usage of Authority Supplied Services and while the Engineer is required to do the same, in case of a conflict and for purposes of immediate payment, the records of the Railroad in this regard
will control. The City though reserves the right to re-coup at a later date any money it deems it inappropriately paid to the Railroad based on records reported to the City by the City’s Resident Engineer.

1.3 Temporary Signs.

a. Temporary passenger directional signs are required for any disruption or rerouting of passenger flow, and must be in place at the time of disruption or rerouting. Signs or combination of signs shall be furnished and placed by the Contractor as required by the Authority and approved by the Resident Engineer.

b. Sign modules shall measure 36" x 36" with upper and lowercase white 1 1/2" and 2 2/3" Helvetica medium text on a black background. These signs shall contain the following information: reason for closures, closing and reopening dates, alternate access information, an apology for any inconvenience during construction, the Contractor's name and telephone number. All temporary signs shall be 20-gauge aluminum with 3/4” plywood backing.

1.4 Cost of Complying With Above Requirements.

a. The cost of complying with the requirements of this Section, except where payment is otherwise specifically provided for, is deemed to be included in the prices stipulated in the Contractor’s Price Proposal.

### Submittal Approvals

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Paragraph No.</th>
<th>Submittal</th>
<th>Approval By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.1</td>
<td>Working methods and schedule for all work in and around the Railroad</td>
<td>Authority</td>
</tr>
<tr>
<td>2.</td>
<td>1.2.1(g)</td>
<td>Measurement methodology</td>
<td>Authority</td>
</tr>
<tr>
<td>3.</td>
<td>1.2.2(a)</td>
<td>Request to employ flaggers or other Employees</td>
<td>Authority</td>
</tr>
<tr>
<td>4.</td>
<td>1.2.3(a)</td>
<td>Request for shutting off or turning on electric current</td>
<td>Authority</td>
</tr>
<tr>
<td>5.</td>
<td>1.2.5(a)</td>
<td>Request for a diversion</td>
<td>Authority</td>
</tr>
<tr>
<td>6.</td>
<td>1.2.6(a)</td>
<td>Request for work train</td>
<td>Authority</td>
</tr>
<tr>
<td>7.</td>
<td>1.2.6(b)</td>
<td>Request for crane and operator</td>
<td>Authority</td>
</tr>
<tr>
<td>8.</td>
<td>1.2.6(c)</td>
<td>Modification to a Work Train</td>
<td>Authority</td>
</tr>
<tr>
<td>9.</td>
<td>1.2.8.1(b)</td>
<td>Barricades, Scaffolds and Safety Railing Arrangements</td>
<td>Authority</td>
</tr>
<tr>
<td>10.</td>
<td>1.2.10(a)</td>
<td>Reallocation of Authority Supplied Services</td>
<td>Authority</td>
</tr>
</tbody>
</table>
SECTION 2

PROCEDURES FOR WORKING ON SIRTOA’S ROW
2.1 Track Closure Restrictions

The St. George Station is vital to the operation of the Staten Island Railway. The operation of the Station must continue uninterrupted during the construction of this project. Train access to the St. George Station is limited to two tracks that enter the Interlocking via a tunnel to the south. The D/B Company will not be granted track closures for both of these tracks at the same time. Furthermore the D/B Company should exercise extreme caution when working over tracks at the face of the tunnel so as to not drop anything onto the tracks that would block, damage or otherwise impede access along these tracks.

2.2 Permissible Track Closures

The Company may request a single track outage of any track at St. George within the hours stipulated in the previous Section of this Exhibit provided there is no conflict with other scheduled work.

It should be noted that when Track 1 is taking out of service in the tunnel, Tracks 1 through 5 within the Station, and Platforms 1 and 2 and half of Platform 3 (adjacent to Track 5) will be available to the Company. Similarly, when Track 2 is taking out of service in the tunnel, Tracks 6 through 10 within the Station, and Platforms 4 and 5 and half of Platform 3 (adjacent to Track 6) will be available to the Company. Taking either Track 1 or 2 out of Service in the tunnel will be considered as only one diversion.

2.3 Track Set-up Time

Initial set-up time for track closure takes approximately 15 minutes. Re-activation of tracks will be done after the Company clears the tracks. The Company must clear up the tracks no later than the end of the permissible hours of work specified in Section 1.2.10.

2.4 Work Site Access

Worker access from within the terminal building to the train platforms will only be provided via the service booth and during the permissible work hours specified in Section 1.2.10.

Vehicle and equipment access to the Interlocking area will only be provided through the North Municipal Lot gate marked as “Gate 5”.

2.5 Safety Training

All D/B Company employees (including subcontractors and sub-consultants) who will be working on SIRTOA’s ROW must have valid Track Safety certification. Track safety certification is valid for three years upon successful completion of an 8 hour Track Safety course offered by New York City Transit (NYCT). If an employee’s certification expires during the course of this project he or she must attend another Track Safety Training course prior to being permitted back on SIRTOA’s ROW.

Contact Mr. Miron Kuchuk, Administrative Project Manager, New York City Transit at (646) 252-3653 to schedule Track Safety training. Please be advised that Track Safety courses are not offered on a daily basis and attendance is limited so the D/B Company should plan ahead when
2.6 Track Mounted Equipment
The D/B Company is required to have all proposed track mounted equipment inspected and approved by SIRTOA’s Maintenance of Way (MOW) Division prior to usage. Inspections will be done at SIRTOA’s Auto Shop at 293 Bay Street, Staten Island, NY. Please be advised, due to the location of the third rail relative to the tracks at the St. George Interlocking, Hi-Rail equipment using outriggers may not be permitted. The D/B Company shall allow ample time for the vehicle inspection process when scheduling track related work.

The D/B Company is to arrange for equipment inspection by SIRTOA’s MOW division through the Resident Engineer. The contact phone number for SIRTOA’s MOW division is (718) 876-8265.

Pilot service will be required when using track mounted equipment.

2.7 Hoisting Equipment
The hoisting capacity of all equipment working on or over SIRTOA tracks and platforms shall be reduced by 50%.

2.8 Procedures for Requesting Diversions / Flaggers / Pilots
Request for all services must be submitted in writing to NYCT through the Resident Engineer. Request for flaggers/pilots should be done at weekly Monday morning coordination meetings with NYCT for the week beginning at 5:00am the following Monday (7 days in advance of when services are required). Requests for diversions of service (i.e. Special Operations) should be done at these meetings three weeks in advance of when the diversion is needed.

Notification as to whether requests can be accommodated will be received by the end of the day on Wednesday for the following Monday.

Request should be to the attention of:
Mr. Miron Kuchuk
Administrative Project Manager,
Engineering Services – Bridges
Capital Program Management
MTA - New York City Transit
2 Broadway, Room B7.145
New York, NY 10004
e-mail: Miron.Kuchuk@nyct.com

2.9 Procedures for Canceling Flaggers
Cancellation of requested services must be made in writing through the Resident Engineer three (3) business days in advance.

2.10 Proper Attire
Hard hats, NYCT approved safety vests and proper work shoes must be worn at all times when walking/working on tracks.
2.11 Proper Equipment

Unless properly insulated with approved heat shrink insulation, no metal tools or equipment will be permitted in the track area. Ladders are to be fiberglass or wooden (no aluminum ladders will be permitted in the track area). Measuring tapes shall be wooden, cloth or fiberglass.

2.12 Work Site Clean Up

The D/B Company shall ensure at the end of every work shift that the work site is clear of any construction debris. This includes all tracks, platforms, walkways and stairways.

2.13 Photo ID

All D/B Company employees must wear Photo ID’s at all times when on SIRTOA property.

2.14 Design Submittals

The D/B Company will be required to submit signed and sealed plans and design calculations for the Authority’s review and approval. Items requiring NYCT approval include but are not limited to the following:

- Temporary Shielding / Scaffolding
- Containment Systems
- Lead Health and Safety Plan

These submissions shall be made to:

Mr. Rajen Udeshi, P.E.
Principal Engineer Outside Projects
MTA - New York City Transit
2 Broadway, Room B7.145
New York, NY 10004
Tel. (646) 252-3673
e-mail: rajen.udeshi@nyct.com

with a copy to

Mr. Samuil Kolta, P.E.
Director, Engineering and Capital Programs
MTA – Staten Island Rapid Transit Operating Authority
60 Bay Street
Staten Island, NY 10301
Tel (718) 876-8252
Fax (718) 876-8258
e-mail: SamuilKolta@nyct.com

2.15 Work over / adjacent to Tracks

Structures such as temporary shielding / scaffolding and containment systems that are to remain in place during train operations must be constructed in such a manner as to not infringe on the clearance envelopes shown in Figures 1 and 2. These figures depict typical tangent track condition. Figure 3 provides information regarding rail and platform dimensions on tangent
track sections and Figure 4 defines how to compute superelevation excess when on curved track sections. For complete details and information on track/platform clearance on tangent and curved tracks see the applicable sections from SIRTOA’s Book of Safety Rules. This document will be provided to the D/B Company at the Construction Kick-Off Meeting.

Flaggers will not be required below temporary shielding / scaffolding and containment systems which are considered impenetrable and are located outside the clearance limits and worker / equipment access is not via SIRTOA ROW. However, if the work above the shielding includes picking equipment and/or material over tracks/platforms (e.g. lifting beams in and out, removing large portions of slabs, etc), then track diversions and flaggers will be required. Work of this nature must be performed within the permissible hours stated in Section 1.2.4 of this Exhibit.

![Equipment Clearance Diagram (Tangent Track Sections)](image)

**Figure 1**
NYCDOT DIVISION OF BRIDGES:
Rehabilitation of SI Ferry Ramps

Figure 2

Figure 3
Figure 4
2.16 Protective Shielding

The following criteria must be adhered to when designing and erecting protective shielding over SIRTOA’s Tracks.

(1) Transit Authority approval is to be obtained for the protective shields prior to the start of construction.

(2) The project will provide, install, maintain and remove, upon completion of project, protective shields in all areas where Transit Authority passengers, facilities and personnel require protection.

(3) The construction of the shields will be such as to prevent any dust, debris, concrete, formwork, paint, tools, etc. from falling on or adjacent to the property below.

(4) The erected protective shields shall not infringe on any existing minimum vertical or horizontal Transit Authority clearances.

(5) Show method of shield attachment to structure – Drilling through or welding to Transit Authority structure will not be allowed.

(6) Use fire retardant material for shields installed above surface/open cut. Use fireproof material for shield installed below street level surface.

(7) Precaution is to be taken to control the deck slab fragmentations that may drop onto the shield, so as not to exceed the design live load (see attachment).

(8) All shield erection work will be performed with Transit Authority inspector and if deemed appropriate Flagman in attendance and at hours determined by the Transit Authority.

(9) Submit six sets of complete details and connections of the shield, to the Transit Authority for review and approval.

(10) It is the contractor’s responsibility to design these protections so that they conform to all existing laws, regulations, specifications and Transit Authority General Notes, that govern this type of work and plans.

(11) Attached are Transit Authority Load specifications for protective shield design.
NYCDOT DIVISION OF BRIDGES:
Rehabilitation of SI Ferry Ramps

**Loads:**

A. The **dead load** shall include the weight of pipes and other subsurface structures carried by the decking.

B. The **live load** shall be computed in either of the following ways: whichever produces higher stresses.

1) As 200 lb. per sq. ft. over the entire structure and 300 lb. per sq. ft. over horizontal timber planks.

2) Where the loading due to the contractor's machinery or equipment is in excess of the above, such loading shall be substituted.

**Allowable Unit Stresses: Steel**

a) Tension, net section --------------- 20 kip per sq. in.

b) Compression, \(17 - .000485 \frac{L^2}{r^2}\) --------- " " " 

where: \(L\)=Unbraced length of member in in.

r=Governing radius of gyration of member in in.

c) Bending, extreme fibre --------------- 20 kip/sq. in.

d) Bearing:

   Structural Shapes ------------------- 30 " " "

   Turned Bolts ------------------------ 30 " " "

   Field Rivets, power driven ---------- 27 " " "

e) Shear:

   Structural Shapes, gross section ---- 15 " " "

   Turned Bolts ------------------------ 15 " " "

   Field Rivets, power driven ---------- 12.5 kip/sq. in.

   Welds, 1/4" nominal size -------------- 2 kip/in. in.

   3/8" " " " " " " " " " " " " 3 " " "

   1/2" " " " " " " " " " " " " 4 " " "

   5/8" " " " " " " " " " " " " 5 " " "
### ALLOWABLE UNIT STRESSES
For Timber in lb. per sq. inch

<table>
<thead>
<tr>
<th>NATURE OF STRESS</th>
<th>LONG LEAF PINE, FIR</th>
<th>SHORT LEAF PINE</th>
<th>WHITE PINE, SPRUCE</th>
<th>WHITE OAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bending, extreme fibre</td>
<td>1200</td>
<td>1250</td>
<td>1250</td>
<td>1400</td>
</tr>
<tr>
<td>Compression:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallel to grain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for L/d &gt; 15</td>
<td>1000(1 - (\frac{L}{d}))</td>
<td>1250(1 - (\frac{L}{d}))</td>
<td>1250(1 - (\frac{L}{d}))</td>
<td>1600(1 - (\frac{L}{d}))</td>
</tr>
<tr>
<td>for L/d ≤ 15</td>
<td>1200</td>
<td>940</td>
<td>940</td>
<td>1200</td>
</tr>
<tr>
<td>Perpendicular to grain</td>
<td>320</td>
<td>200</td>
<td>200</td>
<td>360</td>
</tr>
<tr>
<td>Shear</td>
<td>150</td>
<td>150</td>
<td>90</td>
<td>140</td>
</tr>
<tr>
<td>Modulus of Elasticity *</td>
<td>150,000</td>
<td>150,000</td>
<td>120,000</td>
<td>120,000</td>
</tr>
</tbody>
</table>

where: 
- \(L\) = Length of member in in.
- \(d\) = Least side or diameter in in.

* For long continued loading, the Modulus of Elasticity decreases to one-half the values given above.

The stresses given are for green timber and shall be used without increase of live load stresses for impact.

When members are designed to take shear with the grain, selected timber shall be used. Shearing stresses given above apply also in this case.

For buildings and similar structures in which the timber is protected from weather and practically free from impact, the stresses given above shall be increased 25 per cent.

For railroad bridges and trestles, the unit stresses shall conform to the requirements of the railroad company concerned, provided those of the T.A. are not more severe.
SECTION 3

INSURANCE REQUIREMENTS
FOR
NYCT “OUTSIDE” PROJECTS
The following information summarizes the standard insurance requirements for projects performed on NYCT’s (or their subsidiary) property on behalf of a third party. The only insurance policy that needs to be written specifically for New York City Transit, where they are the Named Insured, is the Railroad Protective Liability Insurance. All other policies they are to be named as Additional Insured.

Policy limits are to be as indicated in Schedule A, Book 1 – Administrative Requirements.

Insurance Requirements for NYCT - “Outside” Contracts

The Contractor shall procure, at its sole cost and expense, and shall maintain in force at all times during the term of this Agreement, except for products and completed operations coverage, which must be maintained for at least three years following completion of the contract, policies of insurance as herein below set forth, written by companies with an A.M. Best Company rating of A-“VII” or better, and approved by the NYCT/MTA and shall deliver evidence of such policies. These policies must: (i) be written in accordance with the requirements of the paragraphs below, as applicable; (ii) be endorsed in form acceptable to include a provision that the policy will not be canceled, materially changed, or not renewed without at least thirty (30) days prior written notice to the NYCT c/o MTA Risk and Insurance Management Department - Standards, Enforcement & Claims Unit, 2 Broadway – 21st floor, New York, NY 10004 by Certified Mail, return receipt requested; and (iii) state or be endorsed to provide that the coverage afforded under the contractor’s policies shall apply on a primary and not on an excess or contributing basis with any policies which may be available to the NYCT/MTA, and also that the contractor’s policies, primary and excess, must be exhausted before implicating any NYCT/MTA policy available. (iv) In addition, contractor’s policies shall state or be endorsed to provide that, if a subcontractor’s policy contains any provision that may adversely affect whether contractor’s policies are primary and must be exhausted before implicating any NYCT/MTA policy available, contractor’s and subcontractor’s policies shall nevertheless be primary and must be exhausted before implicating any NYCT/MTA policy available. Except as otherwise provided herein, policies written on a "claims-made" basis are not acceptable. At least two (2) weeks prior to the expiration of the policies, contractor shall endeavor to provide evidence of renewal or replacement policies of insurance, with terms and limits no less favorable than the expiring policies. If any deductible or retention is applicable, such deductible and/or retention shall not exceed $100,000 unless such increased deductible or retention is approved by NYCT/MTA. The Contractor shall be responsible for all claim expense and loss payments within the deductible or self-insured retention. The insurance monetary limits required herein may be met through the combined use of the insured’s primary and umbrella/excess policies.

A. **Workers’ Compensation Insurance** (including Employer's Liability Insurance with limits of not less than $2,000,000) meeting the **statutory limits** of New York State.

B. **Commercial General Liability Insurance** (I.S.O. 2001 Form or equivalent approved by NYCT in the Contractor's name with limits of liability in the amount of $2,000,000 for each occurrence on a combined single limit basis for injuries to persons (including death) and damage to property. Such policy should be written on an occurrence form and shall include:
- Contractual coverage for liability assumed by the Contractor;
- Personal and Advertising Injury Coverage
- Products-Completed Operations
- Independent Contractors Coverage;
- "XCU" coverage (Explosion, Collapse, and Underground Hazards) where necessary;
NYCDOT DIVISION OF BRIDGES:
Rehabilitation of SI Ferry Ramps

- Contractual Liability Exclusion, applicable to construction or demolition operations to be performed within 50 feet of railroad tracks, must be voided, where necessary, and
- Additional Insured Endorsement (I.S.O. Form CG 20 10 1185 version or equivalent approved by the NYCT naming the following entities and their subsidiaries and affiliates as follows:
  - New York City Transit Authority (NYCTA), the Manhattan and Bronx Surface Transit Operating Authority (MaBSTOA), the Staten Island Rapid Transit Operating Authority (SIRTOA), MTA Capital Construction Co., the Metropolitan Transportation Authority (MTA) including its subsidiaries and affiliates, and the City of New York (City), as Owner.

- Such insurance shall be primary and non-contributory to any other valid and collectible insurance.

C. **Business Automobile Liability Insurance Policy** (I.S.O. Form CA 00 01 07 97 or equivalent approved by the Railroad) in the Company’s name with limits of liability in the amount of **$2,000,000** each accident for claims for bodily injuries (including death) to persons and for damage to property arising out of the ownership, maintenance or use of any owned, hired or non-owned motor vehicle.

D. **Railroad Protective Liability Insurance** (ISO-RIMA or equivalent form approved by the NYCT, covering the work to be performed at the designated job site and affording protection for damages arising out of bodily injury or death, physical damage to or destruction of property, including damage to the Insured’s own property and conforming to the following:

The following entities and their subsidiaries and affiliates are the **“Named Insureds”** for this coverage:
- New York City Transit Authority (NYCTA), the Manhattan and Bronx Surface Transit Operating Authority (MaBSTOA), the Staten Island Rapid Transit Operating Authority (SIRTOA), MTA Capital Construction Co., the Metropolitan Transportation Authority (MTA) including its subsidiaries and affiliates, and the City of New York (City), as Owner.

- The limit of liability shall be **$2,000,000** each occurrence, subject to a **$6,000,000** annual aggregate;
- Indicate the Name of the Contractor to perform the work and the name of the **Government Authority** for whom the work is being performed.
- Evidence of Railroad Protective Liability Insurance, must be provided in the form of the Original Policy. A detailed **Insurance Binder (ACORD or Manuscript Form)** will be accepted pending issuance of the Original Policy, which must be provided within **30 days of the Binder Approval**.
E. Environmental/Pollution Exposures

In the event environmental or pollution exposures exist; the State/City Agency shall require its subcontractor to provide the applicable insurance covering such exposure. The limits and type of insurance provided shall be satisfactory to the State/City and the MTA Agency and will be confirmed to the parties prior to the start of the work.

The Contractor shall furnish evidence of all policies before any work is started to:

Mr. Miron Kuchuk
Administrative Project Manager,
Engineering Services – Bridges
Capital Program Management
MTA - New York City Transit
2 Broadway, Room B7.145
New York, NY 10004

Renewal Insurance – MTA Risk and Insurance

If the Contractor’s insurance will expire while the Work in connection with this Agreement is still being performed, updated evidence of insurance must be mailed to MTA Risk and Insurance Management Dept. 2 Broadway – 21st floor. NY, NY 10004.

Certificates of Insurance may be supplied as evidence of all policies, except the Railroad Protective Liability Policy, designated as Policy D. However, if requested by the NYCT, the Contractor shall deliver to the NYCT within forty-five (45) days of the request a copy of such policies, certified by the insurance carrier as being true and complete. If a Certificate of Insurance is submitted it must: (1) be provided on the MTA Certificate of Insurance Form; (2) be signed by an authorized representative of the insurance carrier or producer and notarized; (3) disclose any deductible, self-insured retention, aggregate limit or any exclusions to the policy that materially change the coverage; (4) indicate the Additional Insureds and Named Insureds as required herein; (5) reference the Contract by number on the face of the certificate; and (6) expressly reference the inclusion of all required endorsements.

The Railroad Protective Liability Insurance Policy, designated as Policy D must be provided in the form of the Original Policy. A detailed Insurance Binder may be provided, ACORD or Manuscript Form, pending issuance of the Original Policy. The Original Policy must be submitted to MTA RIM within 30 days of the Binder Approval.

Nothing herein contained shall be deemed to limit the Contractor’s liability to the limits of liability, or coverage of Policies A-D and Policy E if applicable, their renewals, or replacement.

If, at any time during the period of this Contract, insurance as required is not in effect, or proof thereof is not provided to the NYCT, the NYCT shall have the option to: (i) direct the Lessee to suspend work with no additional cost or extension of time due on account thereof; or (ii) treat such failure as an Event of Default.
EXHIBIT H
SPECIAL PROVISIONS FOR CONSTRUCTION

NOTICE TO PROPOSERS

PROPOSERS ATTENTION IS DRAWN TO ALL REFERENCES OF STANDARD AND SPECIAL SPECIFICATION ITEMS, MADE IN THE PROPOSAL BOOK. THE SPECIFICATIONS SHALL BE USED AS APPLICABLE, IN THEIR ENTIRETY EXCEPT FOR THE SECTIONS OF METHOD OF MEASUREMENT AND BASIS OF PAYMENT, WHICH ARE CONSIDERED_DELETED.

PLEASE NOTE THAT ALL REFERENCES TO UNIT ITEM COSTS DO NOT APPLY. ALL COSTS ARE TO BE INCLUDED IN THE LUMP SUM PRICE FOR THIS PROJECT.
# SPECIAL PROVISIONS FOR CONSTRUCTION

## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>PROVISION NO.</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAINTENANCE AND PROTECTION OF TRAFFI</td>
</tr>
<tr>
<td>2</td>
<td>STANDARD AND LIST OF ITEMS</td>
</tr>
<tr>
<td>3</td>
<td>PROGRESS PHOTOGRAPHS</td>
</tr>
<tr>
<td>4</td>
<td>PROGRESS VIDEO MOVIE</td>
</tr>
<tr>
<td>5</td>
<td>SOP 2004-BR006 – CREATION OF INFORMATION FOR THE NYCDOT WEB PAGE</td>
</tr>
<tr>
<td>6</td>
<td>SHOP, WORKING AND RECORD AS-BUILT DRAWINGS, COMPUTERIZED INDEXING AND MICROFILMING</td>
</tr>
<tr>
<td>7</td>
<td>HOLIDAY EMBARGO</td>
</tr>
<tr>
<td>8</td>
<td>SUPERINTENDENT</td>
</tr>
<tr>
<td>9</td>
<td>EXISTING DIMENSION</td>
</tr>
<tr>
<td>10</td>
<td>RESPONSIBILITY OF COMPANY FOR PLANT AND METHODS</td>
</tr>
<tr>
<td>11</td>
<td>NIGHT WORK</td>
</tr>
<tr>
<td>12</td>
<td>RESTORATION OF DAMAGED AREAS</td>
</tr>
<tr>
<td>13</td>
<td>DEPARTMENT STANDARD DRAWINGS (NEW YORK CITY)</td>
</tr>
<tr>
<td>14</td>
<td>MANUFACTURER'S WARRANTIES</td>
</tr>
<tr>
<td>15</td>
<td>SOP 2006-BR003 – NOTIFICATION PROCEDURES REGARDING MAJOR ROADWAY CLOSURES (SUPERSEDES AND REPLACES SOP 2004-BR005)</td>
</tr>
<tr>
<td>16</td>
<td>STIPULATIONS FOR MEETING CONCRETE COMPRESSIVE STRENGTH</td>
</tr>
<tr>
<td>17</td>
<td>ACCESS FOR INSPECTION</td>
</tr>
<tr>
<td>18</td>
<td>SAFE LOAD ON STRUCTURES</td>
</tr>
<tr>
<td>19</td>
<td>PERMITS, LAWS AND NOTICES</td>
</tr>
<tr>
<td>20</td>
<td>DUST CONTROL</td>
</tr>
<tr>
<td>21</td>
<td>EMERGENCY CONTACT PERSON</td>
</tr>
</tbody>
</table>

Exhibit H
Book 2: Volume 2
# SPECIAL PROVISIONS FOR CONSTRUCTION

## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>PROVISION NO.</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>NOISE CONTROL</td>
<td>1876</td>
</tr>
<tr>
<td>23</td>
<td>STREET LIGHTING WORK</td>
<td>1877</td>
</tr>
<tr>
<td>24</td>
<td>COORDINATION WITH UTILITIES</td>
<td>1878</td>
</tr>
<tr>
<td>25</td>
<td>EXISTING DRAINAGE, WATER AND SEWER FACILITIES AND GAS OR STEAM PIPES</td>
<td>1878</td>
</tr>
<tr>
<td>26</td>
<td>ENCROACHMENT</td>
<td>1879</td>
</tr>
<tr>
<td>27</td>
<td>STORE</td>
<td>1879</td>
</tr>
<tr>
<td>28</td>
<td>ON AND OFF-SITE MATERIAL TESTING</td>
<td>1879</td>
</tr>
<tr>
<td>29</td>
<td>STATEN ISLAND FERRY SECURITY PLAN / TWIC PROGRAM</td>
<td>1879</td>
</tr>
<tr>
<td>30</td>
<td>VERTICAL AND HORIZONTAL CLEARANCE</td>
<td>1881</td>
</tr>
<tr>
<td>31</td>
<td>PROTECTION OF EXISTING TREES</td>
<td>1881</td>
</tr>
<tr>
<td>32</td>
<td>SCHEDULE OF OPERATION</td>
<td>1881</td>
</tr>
<tr>
<td>33</td>
<td>NEW YORK CITY REQUIREMENTS TO PREVENT OVERLOADING OF CRANES DURING CONCRETE PLACEMENT OPERATIONS</td>
<td>1882</td>
</tr>
<tr>
<td>34</td>
<td>LEGAL LOADS</td>
<td>1882</td>
</tr>
<tr>
<td>35</td>
<td>PROJECT SIGNS</td>
<td>1883</td>
</tr>
<tr>
<td>36</td>
<td>SHORING OF EXISTING STRUCTURES</td>
<td>1883</td>
</tr>
<tr>
<td>37</td>
<td>CONSTRUCTION SIGNS</td>
<td>1883</td>
</tr>
<tr>
<td>38</td>
<td>PARKING OF VEHICLES</td>
<td>1883</td>
</tr>
<tr>
<td>39</td>
<td>COMPANY'S NEW YORK CITY TELEPHONE TIE-LINE</td>
<td>1884</td>
</tr>
<tr>
<td>40</td>
<td>WORKER'S COMPENSATION AND TIME/MATERIAL PAYMENTS</td>
<td>1884</td>
</tr>
<tr>
<td>41</td>
<td>ENGINEER'S OFFICE/PC SPECIFICATIONS / CELLULAR PHONES AND RADIOS / FAX MACHINE AND DIGITAL CAMERAS</td>
<td>1884</td>
</tr>
<tr>
<td>42</td>
<td>FALL PROTECTION REQUIREMENTS</td>
<td>1885</td>
</tr>
<tr>
<td>43</td>
<td>RODENT CONTROL</td>
<td>1887</td>
</tr>
<tr>
<td>44</td>
<td>SPECIAL WARNING SIGN</td>
<td>1888</td>
</tr>
<tr>
<td>45</td>
<td>COMPANY/SITE MAINTENANCE</td>
<td>1888</td>
</tr>
</tbody>
</table>
# SPECIAL PROVISIONS FOR CONSTRUCTION

## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>PROVISION NO.</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>GRAFFITI REMOVAL AT WORK SITE</td>
<td>1889</td>
</tr>
<tr>
<td>47</td>
<td>VIBRATION CRITERIA</td>
<td>1889</td>
</tr>
<tr>
<td>48</td>
<td>PROTECTION OF PRIVATE PROPERTY</td>
<td>1889</td>
</tr>
<tr>
<td>49</td>
<td>COMPANY'S RESPONSIBILITY DURING CONSTRUCTION</td>
<td>1890</td>
</tr>
<tr>
<td>50</td>
<td>ACCEPTANCE OF COMPLETED WORK</td>
<td>1890</td>
</tr>
<tr>
<td>51</td>
<td>DELIVERING SUITABLE EXCESS EXCAVATED MATERIAL (MANDATORY)</td>
<td>1890</td>
</tr>
<tr>
<td>52</td>
<td>ELECTRICAL SAFETY</td>
<td>1890</td>
</tr>
<tr>
<td>53</td>
<td>CRITICAL PATH METHOD SCHEDULE</td>
<td>1894</td>
</tr>
<tr>
<td>54</td>
<td>ENGINEER'S FIELD OFFICE</td>
<td>1898</td>
</tr>
<tr>
<td>55</td>
<td>LANDSCAPE</td>
<td>1903</td>
</tr>
<tr>
<td>56</td>
<td>VARIABLE MESSAGE SIGNS</td>
<td>1904</td>
</tr>
<tr>
<td>57</td>
<td>SALVAGE – LIGHTING STANDARDS AND LUMINARIES</td>
<td>1904</td>
</tr>
<tr>
<td>58</td>
<td>CHAIN LINK FENCE</td>
<td>1904</td>
</tr>
<tr>
<td>59</td>
<td>STAGING AREA</td>
<td>1904</td>
</tr>
<tr>
<td>60</td>
<td>NYSDEC REQUIREMENTS</td>
<td>1905</td>
</tr>
<tr>
<td>61</td>
<td>PROTECTIVE SHIELD</td>
<td>1905</td>
</tr>
<tr>
<td>62</td>
<td>COMPANY INITIATED VALUED ENGINEERING CHANGE PROPOSALS (CIVEC)</td>
<td>1906</td>
</tr>
<tr>
<td>63</td>
<td>MILESTONES, INCENTIVE PAYMENTS AND DISINCENTIVE AND LIQUIDATED DAMAGE ASSESSMENTS</td>
<td>1910</td>
</tr>
<tr>
<td>64</td>
<td>SECURITY FENCING</td>
<td>1912</td>
</tr>
<tr>
<td>65</td>
<td>STORAGE DRUMS</td>
<td>1912</td>
</tr>
<tr>
<td>66</td>
<td>SOP 2006-BR006 PROCEDURE FOR WHEN A REGULATOR COMES TO THE WORK SITE (AUGUST 20, 2004)</td>
<td>1912</td>
</tr>
<tr>
<td>67</td>
<td>PRICE TO INCLUDE</td>
<td>1918</td>
</tr>
</tbody>
</table>
SPECIAL PROVISIONS FOR CONSTRUCTION

1. MAINTENANCE AND PROTECTION OF TRAFFIC

1. General

Maintenance and protection of traffic shall be provided in accordance with Section 619 of the New York State Standard Specifications, the New York State Manual of Uniform Traffic Control Devices, Manual of Bureau of Traffic NYCDOT and any Provisions contained in the Plans and/or proposal of this contract.

2. Changes to the Traffic Control Plan

Prior to the start of work, the Company may submit any proposed changes to the Traffic Control Plan to the Resident Engineer for approval. Any Change which alters the basic concept of the plan must be approved by the NYC Department of Transportation or its designee.

3. Roadway Closure

The Company should obtain all required permits and licenses prior to closing any roadway, sidewalk and/or bridge in order to minimize any project delays.

4. VMS Signs

The Company must provide a minimum of 3 portable VMS signs for the duration of the construction activities. Actual location of the VMS will be determined upon submission of MPT plans and in coordination with NYCDOT.

2. STANDARD AND LIST OF ITEMS

Unless otherwise noted, all Sections, Subsections, Articles or subarticles as referred to herein within these specifications shall be those of the New York State Department of Transportation’s most current Standard Specifications for Construction and Material Metric Units and revision to the standard Specifications (A-Pages) included in the Proposal Book. However, this neither implies the State's involvement in any testing and approval of materials, nor in the supervision of construction. All references, therein to the "Department's" Materials Bureau, "Regional Engineer," etc., shall be deemed to mean the "Engineer-in-Charge". Where any reference is made on the plans, specifications or proposal to the "State" or any of its officials, the Company shall substitute the City of New York Department of Transportation or any of its appropriate officials. Those items which have three (3) digits preceding the decimal (203.07M, 555.0104M, etc.,) are standard items of New York State Department of Transportation's current Standard Specification. Other items, those with five (5) digits followed by a decimal or with a NYC prefix are non-standard items and can be found within these Specifications.
Furthermore any reference made to a standard item in New York State Department of Transportation’s current Standard Specifications shall apply except that all references to metric units shall be converted to English units.

3. PROGRESS PHOTOGRAPHS

The Company shall furnish as many photographs as necessary of the construction work in accordance with requirements of Article 1.06.45 of the "General Provisions".

Enlargements shall be delivered to the following locations no later than three (3) days after a photograph is taken:

1. One (1) enlargement of each to the Office of Director of Design-Build/Emergency Services, 2 Rector Street, 7th Floor, New York, NY 10006.

4. PROGRESS VIDEO MOVIE

The Company, in addition to providing Progress Photos as specified above, shall also provide a video, showing the site conditions existing prior to commencement of work, at each stage of construction during the progress of work and conditions after completion of work. The video shall encompass all possible elevation views of each bridge, views from approaches to the bridges and views from the bridges to the approaches. The video shall also contain elevation views of each Bus Kiosk, the Dispatch Tower, NYCT Bus Operator’s Breakroom Trailer currently located on Bus Ramp A, SIRTOA’s Operation Breakroom Building located under Ramp D (BIN 2269730), portions of the Terminal Buildings which interface with the Bus Station North (BIN 2269740) and any permanent structure located under or immediately adjacent to the project bridges. Additionally the video shall also contain images of the North and South Municipal Parking Field as well as the East Stadium (EDC) Parking Lot.

Videos shall be taken under the supervision and direction of the Resident Engineer.

The commentary shall be recorded on the tape either during filming or after by dubbing. The commentary shall be provided by an Engineering Professional with at least ASCE Grade AIV or equivalent qualification.

The total length of the edited video shall be between 30 to 60 minutes per work location as determined by the Resident Engineer. The Company shall furnish the original and one (1) duplicate of the video with proper identification on the top and sides of the video tapes to the following address:

Office of the Director of Design Build/Emergency Contracts  
Division of Bridges  
2 Rector Street, 7th Floor  
New York, N.Y. 10006
Videos shall be taken under proper lighting conditions. The dark areas of the bridge shall be illuminated with either mobile floodlights or with appropriate lighting devices attached to video camera.

The video movies shall be filmed by using a VHS format recorder at "SP" speed on VHS type video cassette, TDK X-PRO professional quality or approved equal. The duplicate tapes shall also be of the same quality.

The Resident Engineer shall evaluate the quality of the video taken at each stage of the construction, based on elements and conditions shot with proper angle and exposure.

5. SOP 2004-BR006 – CREATION OF INFORMATION FOR THE NYCDOT WEB PAGE

Public information created for the DOT Web Site must conform to the NYC Style Guide. Information and policy can be found at:


The information is to be provided in draft format, to the Engineer-in-Charge, no less than two weeks prior to the information being placed on the web page. This will allow for the necessary review and approval by Bridges, DOT MIS and the Graphics unit.

6. SHOP, WORKING AND RECORD AS-BUILT DRAWINGS, COMPUTERIZED INDEXING AND MICROFILMING

The preparation and furnishing of record as-built drawings; computerized indexing and microfilming of all shop, working and record as-built drawings; and a "shop and working drawing indexing sheet" will be performed by the Company.

The Company shall prepare and furnish all shop and working drawings in accordance with this special provision and the following:

1. Articles 1.06.13 of the "General Provisions".

2. Specifications of the City of New York, Department of Transportation, Division of Bridges – Design-Build/Emergency Contracts, titled:

   a) NYCDOT Requirements for the Preparation of Engineering Drawings, Section 1a.
   b) NYCDOT Requirements for the Microfilming of Engineering Drawings and Documents, Section 2b and 2c.
   c) NYCDOT Detailed Instructions for the Computerized Indexing of Engineering Drawings and Documents for Microfilming, Section 3 and latest revision thereof.

Copies of the NYC Bridge Design Specifications are available at the Department of Transportation, Division of Bridges, Design-Build/Emergency Contracts, 2 Rector Street, 7th floor, New York, New York 10006.
3. A.N.S.I. (American National Standards Institute) standards latest edition, as listed below:

- Y1.1-1972 Abbreviations for use of Drawings and in Text (Where Applicable)
- Y10.1-1972 Glossary of Terms Concerning Letter Symbols
- Y14.2M-1979 Line Conventions and Lettering

ANSI Standards may be obtained from American National Standards Institute, 25 West 43rd Street, New York, New York, 10036.

7. **HOLIDAY EMBARGO**

In order to facilitate the movement of ferries, trains, vehicles and pedestrians during the Thanksgiving - Christmas holiday season, the Department reserves the right, without penalty, to modify the Company's operations during the period from the Monday of the week preceding the Thanksgiving Day Week to two (2) days after New Year's Day. When directed by the Resident Engineer, the Company shall comply with the following requirements.

1. Access shall be provided to all existing facilities within the contract limits.

2. Traffic restrictions which permit the Company to work in areas used during rush hours may be canceled.

All costs incurred in complying with the above requirements will be paid for under the appropriate scheduled item, or will be negotiated with the Company if no such items are scheduled.

If sufficient access is provided to all the existing facilities within the project limits during the holiday embargo, then work may proceed within the staged protected work zone.

8. **SUPERINTENDENT**

The Company shall have fully competent superintendents in charge of the work at the site. Any careless or incompetent superintendent or employee shall be removed forthwith by the Company when notified to do so in writing by the Engineer-in-Charge or his designated representative.

9. **EXISTING DIMENSION**

The Company shall verify and be responsible for the accuracy of all dimensions and elevations of the existing structures indicated on the plans and shall call to the attention of the Resident Engineer any errors or discrepancies that he may discover therein. The Company shall have no claim for damages that may result from following an error in regard to aforementioned dimensions and elevations indicated on the plans.
10. **RESPONSIBILITY OF COMPANY FOR PLANT AND METHODS**

The plant, equipment, scaffolding, methods, appliances and procedures shall be such as will secure a satisfactory quality of work, safe and adequate means for inspection, and a rate of progress which, in the opinion of the Resident Engineer, will insure the completion of the work within the time specified. If at any time before the commencement or during the progress of the work, or any part of it, such plant, equipment, scaffolding, methods or appliances appear to the Resident Engineer to be unsafe, inefficient or inadequate for securing the safety of the workers, structure, the quality of work and the rate of progress required, he/she may order the Company to increase their safety and efficiency or to improve their character and the Company shall comply with such orders; the failure of the Resident Engineer to make such demands shall not relieve the Company from his obligation to secure the safe conduct, and the Company alone shall be responsible for the safety, efficiency and adequacy of his plant, equipment, scaffolding, appliances and methods.

11. **NIGHT WORK**

When the Company performs work at night, the work site shall be illuminated to an intensity required by applicable regulations, but not less than 50 lux (5 foot candles). In addition, for the purpose of inspection by the Resident Engineer, the Company shall provide satisfactory lighting of an intensity of 500 lux (50 foot candles) over any area designated by the Resident Engineer.

12. **RESTORATION OF DAMAGED AREAS**

All areas utilized by the Company or his employees for any reason shall, where damaged, be restored by necessary paving, backfilling, grading, seeding, mulching, or planting to the satisfaction of the Resident Engineer at no cost to the City.

13. **DEPARTMENT STANDARD DRAWINGS (NEW YORK CITY)**

Reference is made in the Contract Drawings and these Specifications to certain Standard Drawings of the various New York City Departments. Copies of these Standard Drawings are available at the various City Agencies.

14. **MANUFACTURER'S WARRANTIES**

A. All manufacturers' warranties or guarantees on equipment, materials, or products purchased for use on the contract which are consistent with those provided as customary trade practice shall be obtained by the Company; and upon acceptance of the Contract, the Company shall assign to the City of New York, Department of Transportation, or the agency or authority having jurisdiction over the facility, all manufacturers' warranties or guarantees on all such equipment, material, or products furnished for and installed on the contract.

B. The Company shall warrant the satisfactory in-service operation of the electrical and mechanical equipment and products and related components. The Warranty
shall extend for a period of not less than 12 months following the date of contract acceptance.

15. **SOP 2006-BR003 – NOTIFICATION PROCEDURES REGARDING MAJOR ROADWAY CLOSURES (SUPERSEDES AND REPLACES SOP 2004-BR005)**

Effective immediately, the following notification procedures are to be followed when any major roadway closure is anticipated.

No less than a **seven-day** notice to the public for lane closures is required when:

- More than two thirds of the moving lanes **per direction** are closed to traffic for more than 15 minutes per hour between the hours of 1:00AM and 5:00AM.
- Half (50%) or more of the moving lanes **per direction** are closed to traffic for any duration during all other hours.

Appropriate signage must be in place for not less than one week before the closure is to take place as well as appropriate public notification to affected communities as well as the Press Office and the Communications Center.

A written request to OCMC for lane closures is to be submitted and sent to the appropriate individual in OCMC with a copy to the Chief Staff Manager / Executive Director of Community Affairs (Bridges) and the Assistant Commissioner of OCMC.

Upon verbal concurrence from OCMC and in anticipation of OCMC Permit, a Community Notification is to be distributed at least seven days earlier, to the Project’s pre-approved notification list, including but not limited to Press Office and Communication Center.

When the OCMC Permit is received and work is scheduled, the Deputy Chief Engineer must notify the Chief Bridge Officer, the Chief Staff Manger / Executive Director of Community Affairs (Bridges).

These procedures are to be strictly adhered to. The only exception will be emergencies and must be approved by the Chief Bridge Officer.

It is imperative that the public receive timely notification of all major roadway closures so that they may have the opportunity to plan alternative travel routes or expect delays.

16. **STIPULATIONS FOR MEETING CONCRETE COMPRESSIVE STRENGTH**

The Company shall be responsible for meeting the required concrete compressive strength designated in the Contract.

After the Resident Engineer's approval of the mix material sources, no source changes may be made without subsequent approval from the Resident Engineer.
The work shall consist of furnishing Portland Cement concrete in accordance with Standard Specifications Section 501 -- Portland Cement Concrete -- General with the following annexation.

If the Company in its judgment is unable to meet the strength requirements using the mix specified, it shall submit either a standard Class-adjusted Concrete Mix Design or a Class-modified Concrete Mix Design, and the source of the proposed mixes to the Resident Engineer for approval. For the purpose of this special provision:

Class-adjusted Mix Design is defined by a design that is computed using basic design criteria as indicated in current Standard Specification Table 501-3, "Concrete Mixtures". The adjustment will consist in lowering water-cement ratio while maintaining the same cement factor and all other proportion requirements with a proper yield. A Water-Reducing agent may be considered to compensate for workability within class specified slump limits. The Company shall perform a production trial batch test of the newly formulated mixture prior to initial incorporation of the respective class-adjusted mix into the work of the project. A written certification from the concrete supplier ascertaining that the proposed Class-adjusted Mix Design provides a concrete product meeting materials proportioning, working properties and quality requirements of Section 501, along with 28-day strength results from the production trial batch, shall accompany the concrete documentation submittal.

Class-modified Mix Design is defined by an original design that yields a concrete product with similar quality substance and working properties as required for different type of construction components in Table 501-3, "Primary Use" column and Table 501-5, "Concrete Placement" column. The proposed Class-modified Mix Design should be accompanied with either field strength test records, if available, or trial-mixture method reported by an accredited laboratory, and the data provided should meet the requirements and limitations of ACI 318 regarding concrete quality section 4.3. It is also required to test the properties of the newly proportioned mixture in a production trial batch before initial incorporation of substitute mix into the work of the project.

All new proposed concrete mix designs shall be documented with Bureau's standard "Concrete Mix Design Evaluation Form", the companion test reports, and written certifications if applicable. The use of an identifier by labeling for their respectively specified class of concrete is recommended: i.e. Class A -- ADJUSTED Mix Design or Class A -- MODIFIED Mix Design. No additional compensation shall be paid for the use of a class-adjusted or class-modified mix, or for any expenses incurred in obtaining the required approval.

The Q.A. Field Operations Unit shall be notified at least three days in advance of the batching of any production test mix. Any proportioning or constituent change in the approved mix by the Company will be regarded as a newly proposed design mix.

If concrete below specified 28 day strength is placed, the Company shall, at its own expense, take a number of cores, as directed by the Resident Engineer, in the area where below-strength concrete has been placed, and have these cores tested for compressive
strength by an approved testing laboratory; or the Company shall conduct other tests, as ordered by the Resident Engineer, at the Company's expense.

If none of the tests proves, to the satisfaction of the Department, that the concrete meets the requirements of safe structural standards, the Company shall be ordered by the Resident Engineer to remove such elements or members of the construction which have been placed with below-strength concrete and replace them with concrete of the specified strength at no cost to the City.

All delays to construction occasioned by the testing, investigation and filing of documents, and obtaining approvals as described above, shall accrue to the total time taken by the Company to complete the work and, if in excess of the specified time for this reason or any other reason attributed to the Company, shall be subject to "Liquidated Damages" as per the Agreement.

In addition, when 28-day cylinder tests indicate that concrete below specified strength has been used for a certain pour and, in the opinion of the Resident Engineer, such low value concrete can be used in the structure and therefore, need not be removed or supplemented, the Company shall give a credit to the City based on the difference between the value of the low value concrete used in the structure and the value of the concrete specified. The credit shall be determined by the measured low value quantity by the corrective factor \((1-f/F)\); where \(f\) is the average test strength of the low value concrete and \(F\) is the required specified strength.

17. **ACCESS FOR INSPECTION**

The Company shall provide access for the Resident Engineer to inspect the entire structure to determine the need for additional work and to inspect all work indicated on the plans.

The means of access shall be available for the use of the Resident Engineer for at least six normal working hours prior to the start of the Work at each location to allow the Resident Engineer to make a detailed inspection, with the Company, of the existing conditions. For items of work requiring shop drawings, the access shall be provided prior to the submission of the shop drawings. The means of access shall continue to remain available for the use of the Resident Engineer until the completion of final inspection.

18. **SAFE LOAD ON STRUCTURES**

Prior to commencement of construction of the bridges, the Company shall evaluate and study the condition of the existing structure and determine the type, size, and weight of vehicles and equipment that can place on these structures during construction. The Company shall submit the findings of a Licensed Professional Engineer to the Resident Engineer for approval.

The Company shall obtain the approval of the Resident Engineer before any loads are placed on the existing bridge structures. Approval by the Resident Engineer shall in no way relieve the Company of its responsibility to fulfill the above requirements.
19. **PERMITS, LAWS AND NOTICES**

A. The Company shall at its own expense, obtain all necessary permits, issue all required notices, pay all legal fees and comply with all Federal, State and Municipal laws, ordinances, and regulations, required for this Contract, all of which shall be performed or furnished by the Company without additional cost to the City. The Company shall pay any additional fees or penalty as required by the Agencies due to re-issuance or expiration of permits.

B. Agencies / Divisions with which the Company may be directly or indirectly involved with for permits, permissions, notifications and coordination include but are not necessarily limited to the following:

1. New York City Department of Transportation (NYCDOT)
   a. Passenger Transport Division (Ferries)
   b. Division of Traffic Operations, Signals, Street Lighting & Systems Engineering
   c. Division of Highway Design and Construction
   d. Office of Construction Mitigation and Coordination
   e. Parking Bureau
   f. Traffic Planning – Taxi Program

2. Metropolitan Transit Authority (MTA)
   a. New York City Transit – Surface Operations
   b. New York City Transit – Outside Projects
   c. Staten Island Rapid Transit Operating Authority (SIRTOA)

3. New York City
   a. Department of Environmental Preservation (DEP)
   b. Department of City Planning – Waterfront and Open Space Division
   c. Economic Development Corporation (EDC)
   d. Art Commission
   e. Police Department
   f. Fire Department

4. New York State
   a. Department of Environmental Conservation (DEC)
   b. Department of State

5. Army Corp of Engineers

20. **DUST CONTROL**

During the progress of the work under this contract, the Company shall be required to furnish and apply water and/or calcium chloride for the purpose of allaying dust conditions. Materials to be used, area to be covered, and time and rate of application shall be as directed by the Resident Engineer. Equipment used shall be capable of a
uniform application over the surface to be covered. There will be no separate measurement or payment for this work but the cost thereof included in the other various items of work.

21. **EMERGENCY CONTACT PERSON**

The Company shall designate someone to be available to respond to emergency calls. The name of the person and the telephone number at which he/she can be reached at any time shall be given to the Resident Engineer, and all police agencies in the area. Such person shall have full authority and capability to mobilize forces promptly as required to respond to an emergency and protect the public.

22. **NOISE CONTROL**


   In accordance with the provisions of Section 24-216 Noise Abatement Contract Compliance, of Chapter 2 of Title 24 of the Administrative Code of the City of New York

   a. Devices and activities which will be operated, conducted, constructed, or manufactured pursuant to this contract and which are subject to the provisions of the New York City noise control code shall be operated, conducted, constructed, or manufactured without causing a violation of the code.

   b. Such devices and activities shall incorporate advances in the art of noise control developed for the kind and level of noise emitted of produced by such devices and activities.

   Regulations promulgated pursuant to Section 24-216 after the bid opening of this contract, shall not alter its terms, conditions, and specifications.

2. Pursuant to the provisions of Section 24-224 of the noise control code:

   The permissible hours of work under this code shall be on weekdays from 7:00 AM to 6:00 PM.

   Where operations require work to be performed other than during the hours specified above, the Company shall obtain the necessary variances to the noise control code from the appropriate Department(s) of the City of New York.

3. Prior to submission of his construction timetable and as construction progresses, the Company shall consult with the Engineer to ascertain the location and nature of all noise sensitive activities - that is, schools, churches, hospitals - within the contract limits. The Company shall then make every reasonable effort to minimize interference with these activities from its operations.
4. The Company must remain abreast of and in compliance with the latest DEP policies on Noise Control.

New Construction Noise Mitigation Rule

The New York City Department of Environmental Protection has promulgated a new Construction Noise Mitigation Rule, codified at 15 Rules of the City of New York (“RCNY”) Chapter 28-100 et seq. and appendix. This Rule will become effective on July 1, 2007. This rule was promulgated pursuant to the authority of Local Law 113 of 2005, codified in the Administrative Code as Title 24 chapter 2 which also goes into effect on the same date.

The Construction Noise Mitigation Rule requires a Construction Noise Mitigation Plan at each work site, in which the Contractor shall certify that all construction tools and equipment have been maintained so that they operate at normal manufacturers operating specifications. If the Contractor cannot make this certification, it must have in place an Alternative Noise Mitigation Plan approved by the New York City Department of Environmental Protection. No Contract work may take place at a worksite unless there is a Construction Noise Mitigation Plan or approved Alternative Noise Mitigation Plan in place. In addition, the Rule requires that the Contractor shall create and implement a noise mitigation training program. Failure to comply with these requirements may result in fines and other penalties.

23. STREET LIGHTING WORK

All material to be furnished and all work to be performed shall conform to general specifications and drawings on file with the Department of Transportation, Bureau of Traffic Operations (Street Lighting Division) and shall also conform to the latest NEMA standards and be UL approved. Difference in standards or code requirements shall be resolved as determined by the Resident Engineer.

It shall be the Company's responsibility to familiarize itself with the contents of the above mentioned specifications, copies of which are on file in the office of the Division of Street Lighting.

All materials required for Street Lighting facilities work shall be furnished by the Company, unless otherwise directed. The Company shall obtain all guarantees and warranties from the manufacturer in the name of the City of New York, and shall deliver the same to the City. All technical data and samples shall be approved by the Resident Engineer before the Company proceeds with the purchase of these items.

In addition, the Company shall energize the completed luminaire installation in the presence of Division of Street Lighting Inspection Personnel (24 hour advance notice shall be required) to ensure that all lighting equipment is in operating condition after installation.
The Company shall notify the Department of Transportation, Division of Traffic Operations, Signals, Street Lighting & Systems Engineering at least seventy-two (72) hours prior to the start of work. Telephone (718) 786-2233.

24. **COORDINATION WITH UTILITIES**

All known public and private utility lines within or adjacent to the site of the work are shown based on the best available information in their existing approximate locations on the Contract Drawings. The Company is cautioned that these locations are neither guaranteed nor is there a guarantee that all such lines in existence have been shown on the plans.

The Company shall so conduct its operations as to prevent damage to such facilities. It shall make such explorations as may be necessary to determine the dimensions and locations of lines that may be subject to damage.

Where existing utilities are located within the Contract limits, the Company will be required to give the proper bureaus and the various owning companies at least 72 hours notice before doing any work, in accordance with New York State Industrial Code Part (Rule No. 53), relating to construction, excavation and demolition operations at or near underground facilities.

The Company shall satisfy itself as to the exact location of utility lines and shall protect and support in a suitable manner all utilities encountered in its excavating and trenching operations. If the nature of the damage is such as to endanger the satisfactory operations of the utilities and the necessary repairs are not immediately made by the Company, the work may be done by the respective owning companies and the cost thereof charged against the Company.

If utility relocation becomes necessary during the construction phase as a result of more precise location data or other changes that might develop, these relocations are to be performed by the owner with coordination by the Company. Suitable time frames for these additions shall be coordinated between the Company and the Utility Company. Such time frames are not to be included within previously established time frames.

25. **EXISTING DRAINAGE, WATER AND SEWER FACILITIES AND GAS OR STEAM PIPES**

All existing drainage structures, or any other structure, to be removed or abandoned, shall be broken up to a depth of at least 2 feet below finished subgrade and filled with thoroughly compacted material.

All castings from such structures shall become the property of the Company and shall be removed from the work site, except where removing and resetting castings or removing and storing castings are specifically called for, or unless otherwise directed by the Resident Engineer.
When any work being done under this contract intercepts or affects any existing drainage, water or sewer pipe or appurtenance that is in use, whether shown on the Contract Drawings or not, the Company, when directed by the Resident Engineer, shall relocate, extend, reconnect, alter or repair it as necessary to keep it in proper working order. The cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work, including video of existing drainage, if required by DEP, will be paid for under the appropriate pay items.

If the intercepted or affected drainage, water or sewer pipe or appurtenance is no longer in use, it shall be removed, broken up, disconnected, capped or plugged as ordered by the Resident Engineer.

26. **ENCROACHMENT**

The Company is responsible for all inquiries, searches and protective measures associated with any subsurface, surface or overhead lines (water mains, sewers, gas mains, electrical lines, fire lines, telephone lines, etc.) in the work area.

27. **STORE**

Where the phrase "stores on the site" is used in the contract documents, it shall not mean stores on any of the areas within the right-of-way of this project. The Company shall rent, lease or purchase a storage area, where removed and stored materials shall be placed. This area shall be properly fenced and protected at the Company's expense. Utilization of street or other property of New York City for storage purpose is not allowed unless written approval is given by the Commissioner.

28. **ON AND OFF-SITE MATERIAL TESTING**

The Company shall bear the cost of retrieving samples and testing material specifically called for by the contract documents to be tested by it and the cost of these tests shall be deemed to be included in the prices bid for the related items.

All on-site and off-site material testing not specifically called for by the contract documents to be tested by it shall be performed by certified laboratories paid for under the REI Contract. The Resident Engineer will arrange for these services and the Company’s responsibility will be to provide on-site access to those areas requiring sampling / testing.

29. **STATEN ISLAND FERRY FACILITY SECURITY PLAN / TWIC PROGRAM**

(1) In accordance with US Coast Guard regulations and the Staten Island Ferry’s (SIF’s) USCG-approved security plan, all individuals having access to the restricted areas of the Staten Island Ferry Facilities and vessels must be issued an approved NYCDOT photo identification badge. This identification badge is assigned a unique number, expiration date and characteristics to protect against counterfeit badges.
In addition to the NYCDOT photo identification badge, the Department of Homeland Security (DHS) has recently published final regulations regarding the implementation of the Transportation Worker Identification Credential (TWIC) program. As a result of these regulations employees of the Staten Island Ferry, and any vendors or contractors who require access to secure areas of the terminals or vessels, will be required to acquire one of these credentials.

TWIC is an identification credential that will be issued nation-wide to maritime workers who require unescorted access to secure areas of a port. It will be issued after a background check has been conducted that includes a fingerprint-based criminal history records check conducted by the FBI, an immigration status check, and a name-based terrorism watch list check conducted by the Transportation Security Administration (TSA). This cost is borne solely by the Contractor.

The Facility Security Officer (FSO) and/or Company Security officer (CSO) must be notified in advance of any and all individuals coming to perform any work and/or repairs within the facilities and/or vessels. This is done to ensure those individuals intended to enter the facility have the proper security clearance. The SIF CSO and/or FSO reserves the right to require any contractor/vendor to run background checks on any and all individuals if a background check has not been performed.

(2) The Contractor shall send via e-mail a list of individuals that may be working at any given time in the SIF facilities and/or on the vessels in order that identification badges can be issued on a timely basis.

(3) Emergency requests for rapid clearance and issuance of individual identification badges will be addressed on a case by case basis and response is dependent upon the emergency nature of the request.

(4) SIF identification badges will be worn and displayed at all times by Contractor personnel.

(5) Contractor personnel who have yet to be issued a SIF identification badge and do not have a TWIC will be required to present a photo ID and be escorted in all restricted and/or secure areas of the port or vessels.

(6) The SIF CSO and/or FSO will brief the Contractor on the specifics of all SIF security requirements and will be expected to comply with these requirements at all times.

(7) Contractor personnel who do not comply with the SIF security plan or who do not comply with the security requirements of the SIF will be escorted from the premises and not allowed to return.

No separate payment will be made for any work associated with the requirements stated herein for complying with the Staten Island Ferry Facility Security Plan and the
Transportation Worker Identification Credential (TWIC) program. The cost shall be deemed included in the prices bid for the various contract items.

30. VERTICAL AND HORIZONTAL CLEARANCE

The Company shall verify elevations and clearances from its construction bench marks prior to erecting scaffolding or protective shields in order to insure that the minimum vertical clearance will be maintained.

Procedures for determining horizontal and vertical clearances limits to SIRTOA tracks is given in Section 2 of Exhibit G – Railroad Requirements and in the MTA, NYCT Maintenance of Way Safety Rules and Regulations for Divisions of Track, Electrical Systems, Signals and Infrastructure which will be furnished to the Company at the Project Kick-Off Meeting with SIRTOA.

31. PROTECTION OF EXISTING TREES

THE COMPANY SHALL NOTIFY the Department of Parks and Recreation when the job is started to permit a survey and examination of the site by their inspection unit.

No work adjacent to street trees may be performed until the Company has obtained the required permit from the Department of Parks and Recreation.

32. SCHEDULE OF OPERATION

It shall be the Company's responsibility to coordinate its work with the other Agencies before any work is commenced.

Scheduling of construction operations is the responsibility of the Company. Therefore, the Company shall determine the most feasible system of operations commensurate with its abilities, and submit a schedule of operations as required by the general provisions and the Contract Documents. The system selected shall be subject to approval by the Resident Engineer. The requirement for the system is included to assure adequate planning and execution of the work and to assist the Resident Engineer appraising the reasonableness of the proposed schedule and to evaluate the progress of the work.

The Company's schedule shall reflect the most logical time estimate based on the Company's ability to complete the project quickly and efficiently. The schedule shall include as a minimum, the following:

A. A sufficient number of detailed construction activities necessary to fully describe the various stages of construction at the bridge site(s).

B. Construction and administrative activities performed by others which are necessary to support the Company's activities shall be shown. This would include activities performed by the various utility companies.
C. Requirements for work to be performed beyond the normal work day and work to be performed on Saturdays, Sundays and holidays.

D. A scheduled time for completion of each stage of construction.

E. Lead time for submittal and approval of samples of materials and shop drawings.

F. Lead time for fabrication of materials.

G. Anticipated man-hours for each activity identified in the schedule.

The Company shall update the schedule's changes if field conditions or construction activities warrant, or as ordered by the Resident Engineer or the Commissioner, with updated copies of the schedule which reflect the current status of construction activities and projected activities.

The Company shall perform the work in accordance with the sequence of construction shown in the approved Contract Plans, unless the Company can prove, to the satisfaction of the Commissioner, that an alternate sequence of construction can result in an increase in the efficient completion of the work.

33. NEW YORK CITY REQUIREMENTS TO PREVENT OVERLOADING OF CRANES DURING CONCRETE PLACEMENT OPERATIONS

A. Each concrete bucket shall be labeled with a metal tag welded to the bucket which shall indicate the capacity of the bucket in cubic feet and shall also give the combined weight of the bucket and concrete in pounds when the bucket is filled to capacity.

B. Buckets which, when filled to capacity, exceed the allowable load on the crane shall not be permitted to be used.

C. Any concrete placement operations which do not comply with the above requirements shall be issued stop work orders by the Resident Engineer.

34. LEGAL LOADS

These requirements supplement those of Section 104-05 and 105-12 of the Standard Specifications. They are intended to immediately and effectively prohibit the hauling of materials to or from the contract site in hauling units which exceed the legal load limits without proper authorization. This legal load limitation also applies to all hauling units and construction equipment operating within the project limits on any pavement of structure to be retained in the completed work. This Special Provision does not apply to vehicles and construction equipment operating solely within the project limits and which do not operate on structures or pavement courses which are to be retained in the finished work.
All bidders are cautioned to reflect in the bid prices the cost of operating all affected hauling units and construction equipment within the legal load limitations, including the cost of operating presently owned equipment at less than full vehicle capacity as well as the costs involved in mobilizing, leasing, or purchasing new equipment.

No waivers shall be granted for off-site operations or deliveries. This may require the use of existing concrete, blacktop, or aggregate delivery units at less than optimum loading capacity. Such units may be used only to the extent that their partial loading is within the legal load limitations and conforms to other materials specifications requirement.

35. PROJECT SIGNS

Under this Contract two (2) project signs shall be furnished on each site, each to have overall dimensions of 10' - 0" horizontal and 5' - 0" vertical. Signs shall be constructed and installed in accordance with the provisions of Article 1.06.46 of the "General Provisions" and the Bureau of Highway Operation’s Standard Dwg. No. H-1000 BB "Standard Project Sign-Type BB".

36. SHORING OF EXISTING STRUCTURES

No work shall be done on the portion of the existing structures which require shoring until the structures have been shored to carry the loads imposed on it. The method and procedure of shoring and temporary supports required shall be developed by a Licensed Professional Engineer engaged and paid for by the Company. Such method and procedure for shoring shall be submitted to the Resident Engineer for review and approval.

37. CONSTRUCTION SIGNS

All construction signs shall conform to the English unit equivalent of Item 619.02M – Construction Signs and have the following identification text placed on the back of the sign unobstructed by the sign support:

   The Name of the Company
   New York City Department of Transportation
   Division of Bridges
   Contract No.

   The lettering shall be in indelible black color, and 3 inches high.

38. PARKING OF VEHICLES

Private vehicles owned by the Company or its workers shall not be parked on areas deemed by the Resident Engineer to be hazardous.
39. **COMPANY'S NEW YORK CITY TELEPHONE TIE-LINE**

For the Company whose main office is located outside New York City, it is required that a tie-line telephone connection to the Company's main office be obtained and maintained throughout the contract duration.

40. **WORKER'S COMPENSATION AND TIME/MATERIAL PAYMENTS**

In any Time/Material payments to the Company under this contract, worker's compensation rates shall be reimbursed at the rate actually paid by the Company, or at the industry average in "Manual Rates" as published by the Worker's Compensation Board, whichever is less.

41. **ENGINEER'S OFFICE/PC SPECIFICATIONS / CELLULAR PHONES AND RADIOS / FAX MACHINE AND DIGITAL CAMERAS**

a) Two (2) of the four (4) PCs and software, as specified in Article 56 of these Provisions, are to be delivered to the NYC-DOT Division of Bridges for initial setup. Advance notification should be made to this unit before the shipment is made. Shipping address is:

NYC Department of Transportation
MIS
40 Worth Street - 11th Floor
New York, NY 10013

When set up is complete, the Company will be notified to pick up the equipment. A DOT employee will help with the initial set up at the Company's site.

b) The Company is responsible for the physical security of all equipment and software.

c) Back up of all data on the Server (PC) to the Division of Bridges will occur automatically each night. It is therefore the Company's responsibility to insure that electrical service and phone connections are available at these times. That is, the PC is to be on 24 hours each day. If this is a problem, contact MIS at the address above.

d) All of the PCs in Article 56 must be equipped with Internet access. All costs associated with the Internet service will be included in the Company’s Price Proposal.

e) Three (3) cameras, as specified in Article 56, must be Canon Powershot 8.0 Mega Pixel or approved equals.

f) The Company shall provide, for the exclusive use of NYCDOT personnel supervising this contract, four (4) cellular phones with radio capability, such as Nextel I1000 plus or equivalent, on the date of receiving the Notice To Proceed.
In addition, three (3) similar cellular phones shall be provided for the REI staff. Cellular services shall also be included in Company’s cost proposal.

g) The Company shall provide two memory sticks with a minimum capacity of 2GB.

h) The Company shall provide one (1) scanner, HP Scanjet 8250 or approved equal.

i) Costs associated with all the above mentioned items will be deemed to have been included in the Company’s Price Proposal.

42. FALL PROTECTION REQUIREMENTS

This project includes work that may require exposure of workers to risks associated with elevated work locations. By issuance of this Special Note, the Company is on notice that the provision of fall protection for all workers, in full compliance with OSHA Part 1926, is mandatory on all Department contracts, including this contract. The Company is further placed on notice that the proposed procedures to meet the fall protection requirements must be identified in the Project Safety and Health Plan, as required under Section 107-05 of the Standard Specifications.

The requirement of all applicable OSHA regulations notwithstanding, the minimum fall protection requirements on this project shall include the following:

1. All fall protection systems must meet the requirements of Part 1926, Subpart M.

2. For situations where lifelines are interrupted, double lanyards are necessary to ensure that the worker is continuously protected from falling by attaching one lanyard ahead of the discontinuity prior to unhooking the trailing lanyard.

3. Ladders or stairways are required at all points of personnel access where there is a change in elevation of 19 inches or more, and no ramp, runaway, sloped embankment or personnel hoist is provided. These devices must meet the requirements of Part 1926 Subpart X. Climbing on forms, falsework, or the structure to gain access to work areas is expressly prohibited. However, it is not intended to prohibit the use of ladders for access to work areas, provided the operation is in compliance with OSHA Part 1926 Subpart X and other relevant requirements.

4. Where scaffolds are necessary to provide temporary access to work areas, they must be in compliance with Part 1926, Subpart L. Scaffolds must include a top rail, mid rail, and toe board in compliance with Subpart L. When required by 1929.451(g), personal fall arrest systems must meet the criteria of Part 1926 Subpart M. In addition, the provisions included in §1926.451(g) for fall protection during installation and dismantling of scaffold systems shall be observed on this project at all times.

5. Suspended scaffolds may be used for bridge painting or other purposes only if personnel lifts, scaffolds, or other means are not practical, and only if they meet the
requirements of Part 1926, Subpart L. Specifically, the scaffold must be secured to the suspension cables at all times. All personnel working on a suspended scaffold must be provided fall protection in compliance with Part 1926, Subpart L. The anchorage for any fall protection system must be independent of the suspended scaffold.

6. Fall protection is required for open sides or ends of floors or bridge decks, and for openings in floors or bridge decks, as required in Part 1926 Subpart M. In no case shall a height of fall 6 ft or greater from the side, end, or opening in a floor or bridge deck remain unprotected.

7. All workers in approved personnel aerial lifts must use a personal fall arrest system meeting the criteria of Part 1926 Subpart M, with lanyard attached to the boom or basket, as required by OSHA § 1926.556.

8. Because falls from structural members constitute a serious and clearly recognizable hazard, fall protection for all steel or concrete beams and other structural elements must be in place prior to erection to provide fall protection for workers involved in the initial erection and in subsequent operations until the deck forms are in place. This fall protection shall consist of personal fall arrest systems, safety nets or other means meeting the requirements of Part 1926 Subpart M. During the initial connection of structural elements, workers exposed to moving members shall be required to tie off only if they are not exposed to a greater risk from the moving member. Initial connection is defined as that period during placement or removal of structural members when the member is supported by a crane or other lifting device.

9. During the installation of bridge deck forms, either wood or stay-in-place corrugated metal (SIP), all workers must be protected from falls 6 ft. or greater in height by means of personal fall arrest systems, safety nets, guardrail systems, or other means meeting the requirements of Part 1926 Subpart M. If the Company can demonstrate that using one of the conventional fall protection systems described in Subpart M would create a greater safety hazard or is infeasible, i.e. impossible to construct or would prevent the performance of the required work, an alternate system may be used. The Company must develop and implement a written fall protection plan meeting the requirements of § 1926.502.

10. Instances in which it is impossible to provide fall protection for workers are rare. Where an individual worker must rig the fall protection system, and it cannot be accomplished from an aerial lift or by tying-off to the existing structure, momentary exposure to a fall hazard may be unavoidable. Likewise, ironworkers making initial connections during steel erection or removal may at times not be able to tie off, or otherwise be protected because they need to remain mobile. It is essential that adequate planning of construction procedures minimize such occurrence of unprotected exposure to fall hazards. It is equally essential that the fall protection systems utilized actually enhance safety, rather than creating a secondary hazard.
The following list summarizes commonly encountered situations where fall protection is required, heights at which it must be provided and OSHA references for that requirement.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Height requiring fall Protection</th>
<th>OSHA Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaffold</td>
<td>10 ft.</td>
<td>1926.451(a)(4)</td>
</tr>
<tr>
<td>Implement Hazard</td>
<td>Any exposure</td>
<td>1926.20(a)(1); P.L. 91-596 §5(a)(1)</td>
</tr>
<tr>
<td>Bridge Decks, unprotected sides &amp; edges</td>
<td>6 ft.</td>
<td>1926.500(b)(1)</td>
</tr>
<tr>
<td>Bridge Decks, form installation</td>
<td>6 ft</td>
<td>1926 - 500(b)(2)</td>
</tr>
<tr>
<td>Steel Bridges - initial connections 10 - 25 ft.</td>
<td>1926.501(b)(1);</td>
<td></td>
</tr>
<tr>
<td>Steel Bridges - initial connections above 25 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formwork and Reinforcing Steel</td>
<td>6 ft</td>
<td>1926.501(b)(5)</td>
</tr>
<tr>
<td>Precast Concrete Erection</td>
<td>6 ft</td>
<td>1926.501(b)(12)</td>
</tr>
<tr>
<td>Ramps, Walkways, and Runways</td>
<td>6 ft</td>
<td>1926.501(b)(7)</td>
</tr>
<tr>
<td>Aerial Lifts</td>
<td>All situations</td>
<td>1926.556(b)(2)(v); must satisfy criteria in 1926.502</td>
</tr>
<tr>
<td>Ladders</td>
<td>Varies</td>
<td>1926 Subpart X</td>
</tr>
<tr>
<td>Holes and Floor Openings</td>
<td>6 ft</td>
<td>1926.501(b)(4)</td>
</tr>
<tr>
<td>Dangerous Equipment</td>
<td>All situations</td>
<td>1926.501(b)(8)</td>
</tr>
<tr>
<td>Any situation with potential for tripping, impalement or other severe hazard</td>
<td>Any height</td>
<td>1926.20(a)(1); 1926.28(a); P.L. 91-596§5(a)(1)</td>
</tr>
</tbody>
</table>

43. **RODENT CONTROL**

A. The Company shall notify, in writing the New York City Department of Health, Bureau of Pest Control, at 12-26, 31st Avenue, Astoria, New York 11102, (telephone: 718-956-7103) three (3) weeks prior to the start of construction that will disturb the subsurface areas.
B. The Company is required to submit this notification so that pest control measures can be taken to prevent the infestation of the surrounding communities by rodents displaced from these areas by construction activities. The Company shall coordinate his operations with the Bureau of Pest Control to ensure that rodent control measures are completed prior to the start of construction activities in the affected areas. The cost for this work shall be included in the various items of the contract.

44. **SPECIAL WARNING SIGN**

The Company shall furnish and erect an aluminum panel sign with the following text:

**WARNING!**

"ATTACHMENT OF ANY SORT TO THIS BRIDGE STRUCTURE SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE DIVISION OF BRIDGES, NYC DEPARTMENT OF TRANSPORTATION."

Sign panels shall be aluminum alloy 0.100" thick meeting the requirements of section 730-01, Aluminum Sign Panels, or fiberglass reinforced plastic 0.135" thick meeting the requirements of section 730-23, Fiberglass Reinforced Plastic Sign Panels. The lettering shall be in indelible black color in white background and 3 inches high. For "WARNING", the lettering shall be in indelible red color, and 6 inches high. The sign panels shall be attached to the bridge in a way as approved by the Resident Engineer, and at locations as shown on the drawing or as approved by the Resident Engineer.

This work shall be included in the Company’s Price Proposal.

45. **COMPANY/SITE MAINTENANCE**

Refer to Article 1.06.48 Paragraph (F), Remove Surplus Materials, Rubbish, etc., under General Provision. Delete this sub-article 1.06.48(F) in its entirety, and substitute with the following:

F(i) **Secure Storage of Hazardous Materials**

The Company shall be responsible for the secure storage of materials which are known through the ordinary course of business and experience in the trade to be flammable, toxic or otherwise harmful. Further, the Company shall exercise due diligence and reasonable care to ensure that such hazardous materials are utilized safely, in a manner consistent with the manufacturers' intended purpose.

F(ii) **Site Inspection**

The Company shall subject the site to routine inspection by persons duly qualified to perform such functions, without prior notice. In relation thereto, the Company as regards inspection violations shall at the direction...
of the Resident Engineer or other such duly authorized person, remedy all conditions said to be in violation. If the violations are not resolved within 24 hours or sooner, as ordered by the Resident Engineer, New York City Department of Transportation (NYCDOT) reserves the right to remedy violations with in-house forces. In the event that NYCDOT incurs expenditures because of the Company's failure to remedy known violations, then it shall be understood that NYCDOT shall be entitled to a fee-for-services reimbursement from the Company. Said fee-for-services shall be equivalent to 5% of the cost incurred by NYCDOT.

46. **GRAFFITI REMOVAL AT WORK SITE**

The Company is required to keep its work site free of graffiti at all times. The work site shall include but is not limited to: any element of the construction, permanent or temporary; field offices, construction equipment, fences etc., which are visible to the public. Within thirty (30) days of the Notice to Proceed, the Company shall clean the existing structure of all graffiti to the satisfaction of the Resident Engineer. Thereafter, all future graffiti shall be removed within forty eight (48) hours of its discovery. If the Company fails to remove the graffiti as specified herein, New York City Department of Transportation (NYCDOT) reserves the right to remove the graffiti by either in-house forces or other means, and back-charge the Company for all costs incurred by NYCDOT.

47. **VIBRATION CRITERIA**

The Company's attention is directed to the need to minimize vibrations due to the construction activities. The Company shall govern its methods of operation, including driving of sheet piling, such that the peak particle velocities measured from the sheet pile driving locations to the closest building shall not exceed 2.0 inch per second peak particle velocity for buildings. The maximum hammer energy for driving sheet piling and tie backs shall not exceed (10,000 foot-pounds).

These criteria will be strictly enforced and the Company is advised that it will be required to limit hammer energy and take all measures necessary, including possible hand excavation in front of sheet piling to keep vibrations within acceptable levels. The Company will be required to measure peak particle velocities and transmit this information to the Resident Engineer.

48. **PROTECTION OF PRIVATE PROPERTY**

Prior to the start of work, the Company shall contact the owners of all buildings abutting the project for the purpose of obtaining access to said buildings. The Company shall make a complete interior and exterior video taped survey of all said structures, and any existing damage to the structures shall be noted. A copy of the video tape shall be presented to the Resident Engineer for approval prior to commencing any work.
49.  COMPANY’S RESPONSIBILITY DURING CONSTRUCTION

Snow removal on the traveled roadway within project limits shall be the responsibility of the City of New York. However, the Company shall remove the snow on sidewalks that are opened to the public during the construction period and payment shall be included in the lump sum. The cleaning of the roadway, general maintenance, cleaning scuppers, keeping the drainage system functional, maintaining and protecting street lighting, maintaining existing temporary supports to various structural elements of the bridge including steel plates over deteriorated area of deck as required and directed by the Resident Engineer within project limits up to final acceptance of the project is the responsibility of the Company. Payment shall be included in the lump sum. Removal and disposal of temporary supports shall be included in the lump sum. All existing steel plates on deck are NYCDOT property. Removal of these plates for storage in a designated area for NYCDOT pick-up shall be included in the lump sum.

50.  ACCEPTANCE OF COMPLETED WORK

Whenever the work on one bridge is satisfactorily completed in accordance with the plans, specifications and directions of the Resident Engineer, and is inspected and accepted by the City, the Company shall have no further responsibility and obligation such as damage to the completed work caused by accident, fire, etc. which is no fault of the Company. However, this does not relieve the Company from meeting the requirements of the "Maintenance and Guaranty" Provisions of the Agreement. This Maintenance & Guarantee Period shall remain in effect during the 12 month period subsequent to the date of the final completion of the entire contract.

51.  DELIVERING SUITABLE EXCESS EXCAVATED MATERIAL (MANDATORY)

The Company shall make their own arrangements for any material disposal.

52.  ELECTRICAL SAFETY

This proposal insert note contains policy and procedures for working near energized electrical systems. It is based on OSHA standards, the N.Y.S. High Voltage Proximity Act, and Highway Law. It applies to all operations in the contract that could cause employees or the vehicles or equipment they are operating to come into contact with or enter into dangerous proximity to energized electrical systems.

The N.Y.S. High Voltage Proximity Act applies to electrical systems carrying 600 volts or more and requires employers to:

- Ensure employees are not placed in proximity to high voltage. Proximity is defined as within 10 feet for voltages up to 50 kilovolts.

- Inform employees of the hazards and corresponding precautions when working near high voltage.

- Post warning decals on equipment regarding 10 feet minimum clearance.
- Ensure that when an equipment operator is unable to assess clearances a "spotter" observes for clearance and directs the operator.

- Notify the utility at least 5 working days before any work begins which requires the utility to identify voltages and clearances, or de-energize, insulate or relocate lines.

Failure to comply with any of its provisions is a violation of law and a serious breach of Department safety policy and procedure and the Resident Engineer will issue a stop work order pursuant to Article 105-01 Stopping Work for any operation that is not in compliance.

**PROCEDURES**

**General:** Prior to the start of work where contact with energized electrical systems is possible, the Company shall identify energized lines or equipment and reference their location to prominent physical features. In addition, the Company shall mark the pavement beneath overhead lines with spray paint, survey tape, or with high visibility markers and shall maintain all markings during the period they are required.

The owners of the utilities shall be called upon to decide the need to de-energize or insulate the lines or for the need to otherwise protect the lines against accidental contact. The actual work of protecting the lines shall be carried out by their owners unless such owners authorize and pay the Company to perform such work on their behalf. Protection provided at the request of the Department, with respect to utility facilities located within the highway right-of-way shall be the sole financial responsibility of the utility. In addition, upon request, the utility at its sole expense shall provide necessary information concerning its high voltage facilities to the Department, the Company and its subcontractors. Protection provided for the benefit or at the request of the Company or subcontractor shall be the financial responsibility of the Company or its subcontractor.

The location of electrical lines and the precautions and safeguards to be taken shall be discussed at pre-work safety meetings with all employees on the job. New employees will be informed of electrical hazards and proper procedures at the work site.

The Company shall identify and reference all potential electrical hazards and document such actions to the Resident Engineer as part of the Safety Plan for the project. Energized electrical lines or equipment shall be conspicuously marked and workers shall be reminded of their locations and the safeguards and precautions to be taken prior to beginning any nearby work that may cause the workers to approach electrical lines. New employees shall be informed of electrical hazards and proper precautions and procedures.

Requirements for specialized work shall be as follows:

1. **Paving, Patching, Chip Sealing or Widening:** Prior to the start of each workday high visibility markers or other devices approved by the Resident Engineer shall be placed to mark the location of overhead wires. As an alternative, the pavement beneath overhead lines may be marked with spray paint.
or by other means approved by the Resident Engineer. This requirement shall also apply to off-site areas used for contract purposes. The Company shall periodically patrol the worksite to ensure that the markings are in place and shall replace any that are missing and shall maintain all markings in good condition. Supervisors shall discuss electrical safety with appropriate crew members at tailgate safety talks.

Spotters shall be positioned at the paver or widener to direct truck movement and observe for overhead wires. The spotter, drivers, operators, supervisor, and all employees shall be alert for overhead wires.

All trucks operating on the project, delivering materials, or delivering equipment to the site shall display warning decals regarding electrical contact. Independent truck drivers delivering materials or equipment shall be provided decals. Drivers shall be told about the presence and location of overhead electrical wires before beginning work, how they are marked, and the requirement for spotters. Trucks that have emptied their material shall not leave the paver until the box is in its full down position.

2. **Aerial Lifts, Cranes, Boom Devices:** Where there is potential for proximity or contact with energized lines or equipment, work shall not begin until a safety meeting is conducted and appropriate steps are taken to identify, mark, and warn against accidental contact. The supervisor shall review operations daily to ensure compliance.

Where the operator's visibility is impaired, spotters shall guide the operator. Hand signals shall be used and their meaning clearly understood between operator and spotter. When visual contact between the spotter and the operator is impaired, the spotter and operator shall be in two-way radio contact.

Aerial lifts, cranes, and boom devices shall have appropriate warning decals.

3. **Tree Work:** Wires shall be treated as live and high voltage until verified by the utility. Branches touching wires shall be removed before work begins. Limbs and branches shall not be dropped onto overhead wires. If limbs or branches fall across electrical wires, all work shall stop immediately and the utility shall be called.

When climbing or working in trees, pruners shall try to position themselves so that the trunk or limbs are between their bodies and electrical wires. Pruners shall not work with their backs toward electrical wires. A bucket truck is the preferred method of pruning when climbing poses a greater electrical contact threat.

Personal protective gear shall have appropriate de-electric characteristics needed for working near electricity.

4. **Traffic Signal Work:** Crews working near electrical lines or electrical equipment shall employ as appropriate the following precautions:
They shall request the utility to determine voltage and take appropriate action to render the work safe, and when working on or around Department electrical systems shall:
- use rubber blankets, mats, gloves and other insulative equipment and tools specifically approved for such work by the Resident Engineer or electrical inspector
- use electrical test equipment to determine if equipment to be worked on is energized
- de-energize equipment, when possible, prior to working on the equipment

5. Building Electrical Work: Employees working on electrical systems for building shall be knowledgeable about and shall employ when appropriate OSHA Lock-Out/Tag-Out procedures to prevent exposure to unguarded electrical systems.

Underground Electrical Lines and Equipment: Before installation, excavation or subsurface exploration where there exists reasonable possibility of contacting any utility lines or equipment, the New York City One Call Center of the Underground Facilities Protective Organization (UFPO) shall be called, and a request made for identifying/marking their location(s).

When the New York City One Call Center is called, telephone operators will need:
- minimum of 2 working days notice prior to work beginning
- name of County, City, Village or Town
- name and number of street or highway marker
- nearest intersection at work site
- type of work
- date and time work is to begin
- caller's name, Company/Department name and address
- phone number for contact and special instructions

Utilities that do not belong to UFPO must be contacted separately. UFPO may not have a complete list of utility owners. The Town, City or County is required to maintain this information and may have to be contacted.

Utilities discovered shall be marked before work begins. Supervisors shall periodically refer their location to all workers who are subject to exposure, including new employees.

Emergency Response: When working near electrical lines or equipment, avoid direct or indirect contact. Direct contact is contact with any part of the body. Indirect contact occurs when part of the body touches or is in dangerous proximity to any object in contact with energized electrical equipment. Two assumptions should always be made: 1) that lines are "live" (energized); and 2) carry high voltage. Electrical lines can only be considered "dead" when verified by the utility.
When there is any question about voltage and safe distance, the owner of the lines or equipment must be called in advance of work. As voltages increase, minimum clearances increase. Through arcing, injuries or fatalities may occur even if actual contact with high voltage lines or equipment is not made. Potential for arcing increases as voltage increases. Weather and contact with conductors such as tools can increase the possibility of becoming energized without contact.

If an individual becomes energized, DO NOT TOUCH the individual nor anything in contact with the person. Call for emergency medical assistance and the utility immediately. If the person is no longer in contact, CPR, rescue breathing or first aid should be administered immediately, but only by a trained person. It is safe to touch the victim once contact is broken or the source de-energized. If a power line falls:

- Keep everyone at least 10 feet away
- Use flagging to protect motorists from fallen or low wires
- Call the utility, police or fire department immediately
- Place "guards" around the area
- Do not attempt to move the wire(s)
- Do not touch anything that is touching the wire(s)
- Be alert to water or other conductors present

Wires that contact vehicles or equipment will cause arcing, smoke and possibly fire. Occupants should remain in the cab and wait for the utility. If necessary to jump from a vehicle, leap with both feet as far away from the vehicle as possible without touching the equipment. Jumping free of the vehicle is the last resort.

Crews shall have emergency numbers readily available. These numbers shall include local utility, police/fire and medical assistance.

6. Railroad Work: For procedures when working on or above railroad Right-of-Way, see Book 2, Exhibit G – Railroad Requirements, Section 1-Execution of Work. Additionally the Company will be provided with NYCT and SIRTOA’s Book of Operation Rules and Safety Rules at the Construction Kick-Off Meeting with the Railroad.

The Company shall be responsible to ensure that all employees and employees of sub-contractors are familiar with the contents of the NYCT and SIRTOA’s rules and regulations (including the latest revisions and additions) and that these employees shall so conduct themselves as not to violate any of the rules and regulations.

53. CRITICAL PATH METHOD SCHEDULE

The schedule submitted in accordance with section 108-01 "START AND PROGRESS OF WORK" shall be prepared using a fully loaded man-hour based Critical Path Method (CPM). The cost of preparing such schedule shall be included in the Company’s Price Proposal.
The design and construction of the project shall be planned and recorded with a fully loaded man-hour based CPM schedule. The schedule shall be used for coordination and monitoring of all work under the contract including all activities of the consultants, subcontractors, vendors, and suppliers. The Company shall submit said schedule monthly for review by the Resident Engineering firms’ dedicated scheduler.

The Department will use the schedule to monitor the progress of design and construction, comparing the work performed to the Contract time and phasing requirements, resolve disputes, identify change order costs, approve time extensions and to assign necessary resources for inspection and administration of the Contract.

A. Schedule Requirements

Within 25 calendar days of Notice to Proceed (NTP), the Company shall submit for the Resident Engineer (RE) and Engineer-in-Charge’s (EIC) review a fully loaded man-hour based CPM schedule. The schedule will be reviewed to determine whether it meets the requirements under Subsection B below and shall not exceed the Contract time requirements for any milestones or for the entire project.

Following the RE and EIC’s review, revisions to the proposed schedule, if necessary, shall be made by the Company. The final proposed schedule must be completed within 40 calendar days of the Notice to Proceed. Failure to provide a final schedule by that date will result in withholding all progress payment estimates pursuant to the Contract.

Approval of the schedule by the RE and EIC shall not be construed to imply approval of any particular method or sequence of construction or to relieve the Company of providing sufficient materials, equipment and labor to guarantee completion of the project in accordance with the contract proposal, plans and specifications. Approval shall not be construed to modify or amend the agreement or the date of completion therein.

Failure by the Company to include in the CPM Schedule any element of work required for the performance of the contract shall not excuse the Company from completing all work required within the completion date(s) specified in the Contract notwithstanding approval of the Schedule by the RE and EIC.

A 60 calendar day preliminary schedule of proposed activities by the Company may be submitted to the Resident Engineer to enable beginning of Contract work preparation such as material orders, preparation of working drawings, and mobilization of equipment while the CPM schedule is being prepared.

No Contract work may be pursued on the project site unless there is a 60 calendar day preliminary schedule or a fully loaded CPM schedule meeting the Contract requirements.

B. Schedule Requirements

All activity on arrow diagrams shall include:
Activity Nodes
Activity Description
Activity Duration

The activity on arrow diagram shall show the sequence and interdependence of all activities required for complete performance of all items of work under this Contract, including shop drawing submittals and approvals and fabrication and delivery activities. All network "dummies" are to be shown on the diagram.

The activities are to be described so that the work is readily identifiable and the progress of each activity can be measured. For each activity, the Company shall identify the trade or entity performing the work, the duration of the activity in days worked, the resources involved by trade, the equipment involved and the location of the work.

The Company shall also provide the work days per week, holidays, number of shifts per day, number of hours per shift, and major equipment to be used for each activity. If requested by the Resident Engineer, the Company shall furnish production rates or other information needed to justify the reasonableness of activity time durations.

Expected seasonal weather conditions, such as precipitation and temperature, shall be included by the Company in the planning and scheduling of activities.

The Company shall not constrain the start or completion of any activity unless specifically required by the Contract or approved by the Resident Engineer.

The activity on arrow diagram submitted may either be hand drawn or computer plotted. Regardless of the type of diagram, the network must be legible, readable, and understandable by the Resident Engineer. Network diagrams shall be on standard D size sheets and not a continuous diagram.

All network diagram submissions shall include one electronic copy (format to be determined by the Resident Engineer) and three print copies.

The Company shall provide three copies of the following sorts:

I node - J node
Total Float
Early Start

C. List of Submittals

Within forty (40) calendar days of the Notice to Proceed, the Company shall provide a list of submittals required under the contract, i.e., shop drawings, required permits, erection/demolition plans, etc. The list shall show a scheduled submission date for each submittal and identify the earliest activity affected by each of these submittals. This list shall be revised and updated monthly with each schedule submission.

D. Contingency Within the Schedule
Any contingency within the Schedule, i.e., a difference in time between the project's early completion and required contract completion date, and "float" in the Approved CPM Schedule belongs to the project and not to any party to the contract.

E. Float Manipulation Not Permitted

The Company shall not sequester "float" through such strategies as calendar manipulation, or extending durations to fill up available float time.

F. Schedule Updating

The Company shall update the schedule monthly. Each update shall show actual dates of activities started and completed, the percent of work completed to date on each activity started but not yet completed, the man-hours used for each activity, the current allocation of staff resources and major equipment and the status of procurement of critical materials. The Company shall also provide updated I node J node sorts, total float sorts, a 60 day look ahead bar chart, and a narrative report. The narrative report shall include a description of problem areas, current and anticipated delaying factors and their estimated impact on performance of other activities and mandated contract dates, and the explanation of corrective action taken or proposed.

The Company shall provide a 2-week look ahead schedule at each one of the bi-weekly scheduled meetings.

G. Changes to the Approved Project Schedules

The CPM Schedule shall accurately reflect the manner in which the Company intends to proceed with the project and shall incorporate the impact of delays and Orders-on-Contract when these factors can be accurately determined. All changes made to the schedule, i.e., the addition of activities, change in logic or changes in activity durations shall be submitted in writing and are subject to approval by the Resident Engineer before inclusion in the CPM Schedule.

To initiate changes to the approved schedules, the Company shall meet with the Resident Engineer and provide the information necessary to prepare a revised (updated) Activity on Arrow Diagram.

No revision to any contract milestones, or contractually mandated schedule provision will be permitted, without written authorization from the Resident Engineer.

H. Compliance with the Schedule

The Company shall employ and supply a sufficient force of workers, materials and equipment and shall prosecute the work with such diligence so as to maintain the rate of progress indicated on the approved schedule to prevent work stoppage and ensure completion of the project within the contract time. Any additional or unanticipated costs
or expense required to maintain the schedule shall be solely the Company's obligation and shall not be charged to the Department unless provided for in other provisions of the contract.

In the event a notice is received of a change to the Contract which is likely to cause or is causing delays, the Company shall notify the Resident Engineer in writing within 10 calendar days, of the effect, if any, of such change, or extra work, or suspension or other conditions upon the Project Schedule and shall state in what respects, if any, the Approved CPM Schedule should be revised with the reasons therefore. The reasons for these revisions must be succinct, comprehensive, and factual to merit consideration.

If the Company fails to comply with the provisions of this special note, the Resident Engineer may withhold approval of all progress payment estimates pursuant to this contract

54. ENGINEER'S FIELD OFFICE

DESCRIPTION:

The Company shall provide, furnish and maintain one (1) fully equipped field office for the exclusive use and occupancy by the Department’s engineering personnel and Supervising Consultant. The field office shall be a building, store front, or mobile trailer, located in the staging area as specified in Exhibit B, Technical Specifications. The Company may have facilities in an adjoining area separated by a lockable door, provided such facilities are in a location approved by the Resident Engineer.

If the facilities of an existing building, or store front, are to be utilized it shall be completely renovated to meet the requirements specified herein. The field office shall be renovated with all new materials and all equipment furnished shall be new.

The Company shall obtain a Certificate of Occupancy from the Department of Buildings, certifying that the field office structure and occupancy thereof conforms to the requirements of all laws, rules, regulations, and orders applicable to it. A copy of the Certificate of Occupancy shall be submitted to the Resident Engineer prior to occupancy and use of the field office.

MATERIALS:

A. General Construction

The Engineer’s Field Office shall be an approved and weatherproofed, building or mobile trailer. The structure shall have a minimum ceiling height of 7 feet, provide a minimum floor space of 1200 square feet and be partitioned to provide four rooms: three small rooms and one large room with adjoining doors. The smaller rooms shall not be less than 100 square feet in area, and shall each contain one window. The larger room is to be utilized as a conference room and is to have a minimum of two windows. Two outside doors and six windows will be the total required. Shelving shall be provided as ordered by the Resident Engineer. Floor covering shall consist of all new commercial grade
carpeting or vinyl tiles or a combination thereof throughout the floor space. All walls shall be covered with sheet rock and newly painted. Ceilings shall be sheet rock or acoustical tile in good condition without any exposed wiring, piping, or duct work.

B. Facilities

The Engineer’s Field Office shall contain or have the following facilities incorporated:

1. **Lighting:** Electric light, non-glare type luminaires to provide a minimum illumination level of 1000 Lux (100 ft.-candles) at desk height level.

2. **Heating and Cooling:** Adequate equipment to maintain an ambient air temperature from 70 to 75º F.

3. **Electrical:** Electrical wiring and outlets throughout the entire field office shall be in full conformance with the National Electric Code and local building code.

4. **Toilet:** A separate enclosed room, properly ventilated and complying with applicable sanitary codes shall contain a lavatory with running hot and cold water and flush-type toilet.

5. **Telephone:** A minimum of 6 separate phone lines shall be provided for the exclusive use of the Department’s and Resident Engineer’s personnel. One of those lines shall be provided for use with a computer system and one with a facsimile machine.

6. **Potable Water:** Potable water supplied from an existing system of 5 gallons capacity water cooler of a type to be approved by the Resident Engineer. Replacement of bottles of water shall be provided by the Company, when required.

7. A wood or metal sign shall be affixed on the outside wall of the trailer or building with the following inscription painted in black block lettering on a white background. Paints shall be approved exterior enamels:

   
   | CITY OF NEW YORK          | 2-1/2” |
   | DEPARTMENT OF TRANSPORTATION | 3-1/2” |
   | DIVISION OF BRIDGES        | 3-1/2” |
   | RESIDENT ENGINEER’S OFFICE | 1-1/2” |

All windows and doors shall be weatherproof and each equipped with adequate locking devices. Each window shall have a minimum area of 8 square feet, shall be screened, and of a type that will open and close to provide adequate ventilation. Exterior doors shall be provided with cylinder locks, keyed alike, and three (3) keys shall be furnished for each lock.
C. **Equipment**

The following equipment shall be furnished and installed in the field office by the Company and shall be new or used equipment, in good working condition, satisfactory to the Resident Engineer.

5 - Office desks with drawers, locks and keys
5 - Swivel chairs with arms, for the above

10 - Office chairs, metal, with padded seats and backs, no arms.

1 - Steel supply cabinet (approximate size 72” high by 36” wide by 18” deep, with four adjustable shelves, tumbler lock and 3 keys.

2 - Fire resistant cabinet, 4 drawer, legal size with lock and three (3) keys, meeting the requirements “Filing devices, insulated (36 E9)” Class D label, of the Underwriters’ Laboratories, Inc. Specifications.

4 - Individual lockers (17” wide by 18” deep by 72” high) with flat key locks and two (2) keys each.

2 - Calculators with answer registered to at least eleven digits.

4 - Waste paper baskets (metal, approximately 12” square by 16” high).

4 - Personal Computer meeting requirements: Intel Pentium 4 Central Processing Unit(CPU); minimum clock speed of 2.0 GHz minimum of 512 MB of DDR SDRAM; minimum of 120 GIG of internal hard drive; IDE hard drive interface; Internal CD-RW/DVD drive; Internal 48X CD-ROM Drive; 250 MB Internal Zip Drive; 1.44 MB 3.5-inch Internal Floppy Disk Drive; 19” high resolution (0.26 DOT) 1280x1024 non-interlaced SVGA color monitor slots; AGP video card; 3 PCI slots; 1 serial ports, 1 parallel port; power supply with built-in surge suppression; Ethernet NIC+ 57,000 bps internal fax modem; minimum of PS/2 mouse + keyboard. The Company must also provide DSL or Cable Internet access.

2 - Set of software for Windows XP or greater, MS Office 2000 for Windows, including CD- ROM/diskettes, operations manual and valid software license agreements or approved equal programs.

2 - Detailed network analysis program which shall be directly and fully translatable into “Primavera Project Planner for Windows P4 as licensed by Primavera, Inc.

1 - Color printer with a minimum resolution of 1440x720 dpi, minimum color printing speed of 9 color pages per minute. The color printer shall be brand new and shall include all software, printer cable and ink cartridges (extra ink cartridges shall be supplied by the Company as required by the Resident Engineer throughout duration of the construction period.

3 - Digital Camera with the following features: 2.5 inch color LCD Screen, 3X Optical/4X Smart Zoom, automatic exposure, built-in flash, 2 each- lithium ion battery pack with minimum 2 hour power storage at full charge, battery charger, shoulder strap, soft carrying case/bag.

The digital cameras shall be Canon Powershot or approved equal with a media card of 1 GB.
The Company shall obtain a replacement warranty for the digital camera throughout the duration of the Contract.

3 - Memory sticks, 2GB each.
1 - External Hard Drive, WD Passport Portable Drive or approved equal with a capacity of 80 GB.
4 - Surge protectors, w/four outlets and circuit breaker control and surge failure indicator light.
1 - 30 minutes battery back-up unit
200 - 700 Mb Blank CD-R
50 - 3-1/2” diskettes and storage container with additional diskettes as needed by the Engineer
1 - Hewlett Packard Scanjet 8250 or equal color scanner with capability of scanning 11” x 14”
1 - Facsimile machine which utilizes plain copy paper. This machine shall be self feeding, transaction confirmation, 20 phone number preset and automatic dial recall.
1 - Concrete Slump Testing Equipment Set (cone-rod-base plate-straight edge).
3 - Fire extinguishers, non-toxic dry chemical type meeting Underwriters Laboratories, Inc., approval for Class A, Class B, and Class C fires with a minimum rating of 2A: 10B: 10C
1 - First Aid Kit kept properly stocked with appropriate first aid supplies at all times.
1 - Electric refrigerator (5 cft minimum capacity).
1 - Microwave (minimum heating volume of 1cft).
1 - Drafting table 3’ x 5’ with storage drawers and drafting stool.
2 - Air Entrainment Meter with carrying case including rubber mallet. The meter shall be capable of producing an accurate test result in approximately five minutes and shall be of a type approved by the Resident Engineer. Meters must be maintained in serviceable condition through the entire contract.
1 - Clothes rack or closet.
1 - Photocopying Machine, desk top, heavy duty, electric, dry process photocopying type with the following features: letter, legal and 11” x 17” copying, enlarging to 156%, reduction to 64% self feeding. The supply of copy paper and toner shall be replenished by the Company as required by the Resident Engineer.
1 - Vertical filing plan rack for four sets of 22” x 36” plans.
1 - Pencil Sharpener.
2 - A minimum-maximum thermometer.
1 - Concrete Thermometer.
1 - Asphalt Thermometer.
6 - Safety Harnesses, catalog no. 5454 as manufactured by Triple D-Ring Work and Retrieval Harness Klein Tools Inc., 7300 McCormick Boulevard, Chicago, Ill., 60645, or approved equal which must conform to all applicable safety standards.
6 - Lanyards, catalog no. 35170, as manufactured by Deceleration Lanyard Klein Tools, Inc., 7200 McCormick Boulevard, Chicago, Ill., 60645, or approved equal which must conform to all applicable safety standards.
6 - Telephone Answering Machine with playback capabilities from another phone and the ability to record 30 incoming messages of 60 second duration.
7 - Cellular phones with radio capability, such as Nextel I1000 plus or approved equal. The Company shall also provide separate chargers for each of these units.
CONSTRUCTION DETAILS:

The building shall be fully equipped and made available for use and occupancy by the Department’s personnel and Supervision Consultant prior to the start of any construction work. The building shall be maintained in good, clean, and sanitary working condition by the Company for the duration of the Contract. The Company shall provide daily janitorial services. The Company shall also provide and pay all costs for electrical service, telephone service for calls within the regional area, hot and cold water, heat and fuel, and janitor service. In addition, the Company shall supply such staples as: paper towels, hand soap, toilet paper, and similar supplies as well as provide a one-month supply as a reserve stock.

The office, incorporated facilities, equipment and personal property of the Department’s employees shall be protected by the Company against loss or damage from fire, theft or other causes, at all hours of the day and night. The Company shall provide fire insurance, extended coverage for vandalism, malicious mischief and burglary, and theft insurance coverage in the amount of $25,000 for office equipment of the City of New York in the Engineer’s field office and for property of City personnel that is used in the contract work and stored in the office. All insurance coverage shall be written by a company approved by the Commissioner and payable in case of loss to the City of New York.

When directed by the Resident Engineer, the Company shall disconnect all services and remove and dispose of all temporary installation from the site, including fencing, surfacing and utilities. The site shall then be cleaned, loamed and seeded if required and left in a neat and acceptable condition. On and after the date of the Resident Engineer’s Final Acceptance, the temporary structure and all installed equipment may become property of the Company, and if directed by the Resident Engineer shall be disposed of, by him, away from the site of the work. Resident Engineer’s Final Acceptance shall be when the Company has completed all punch list work and Official Completion Date has been set.

METHOD OF MEASUREMENT:

Payment will be made for each month (to the nearest 1/4 month increment), of availability for occupancy by the Field Engineers during the period of the Contract. Payment will begin the first month that the office is fully equipped, serviced as specified, and made available for occupancy. Monthly payments will continue until the date of acceptance of the contract. When directed in writing by the Resident Engineer, payment for each month’s occupancy after the date of acceptance will be made as part of the final estimate. Monthly payments may be terminated on a specified date prior to acceptance of the contract by written notification by the Resident Engineer that such office will no longer be required on the Contract.

No payment will be made for each calendar day during which there are deficiencies in compliance with the requirements of this specification. The first nonpayment calendar day shall commence twenty-four (24) hours after notice to the Company of such a
deficiency. This non-payment shall be deducted from the Company’s next estimate. The amount of such calendar day non-payment will be determined by dividing the unit price bid per month by 30.

In addition, if the cited deficiencies exceed 72 hours or is permitted to recur, liquidated damages will be assessed at one-fifth (1/5) the rate (20%) shown in Schedule “A” for each subsequent calendar day or part thereof that a cited deficiency resulting in non-payment, as prescribed herein, is not corrected.

BASIS OF PAYMENT

Payment shall include: furnishing all the labor and materials for providing or constructing the field office; making all necessary electrical, water, sewer and other connections required to make the above facilities operative; payment of all rental costs; furnishing and paying for heating fuel, as required; all electrical energy; private telephone service; staples, as specified; and all necessary incidentals to complete the work, all in accordance with the specifications and the directions of the Resident Engineer.

55. LANDSCAPE

1. Protection of existing landscape:

   Soil compaction, pollution and erosion shall be avoided or minimized at all times during the course of the project. Snow fences (DPR standard) shall be installed under the drip line of all existing trees within the active work zone to protect the soil under the trees’ branches. Outside the drip line, areas will be designated by the Resident Engineer for storage of materials, equipment, vehicles as well as parking of Company’s personal vehicles and driving routes through the landscape. On sloping areas, erosion-control methods will be used to prevent movement of soil, especially into storm drains. Where it will not impact on trees, existing topsoil may be scraped off and stored in piles, to be replaced at time of site restoration. No tree pruning may be performed except by a qualified tree-care professional and with the permission of the Parks’ Department. Under no circumstances may petroleum products, concrete wash water, paint or other pollutants be allowed to seep into the landscape or city drainage system.

2. Maintenance of Landscape:

   During the course of the project, the Company shall make every effort to remove litter, debris and excess materials from the work site on a regular basis in order to deter illegal dumping and encourage the public to respect the project site and the rest of the St. George Terminal area. All areas within the project limits will be kept as clean as possible by the Company. Additionally, any vegetation requiring maintenance such as mowing of grass will be maintained to the standard occurring in the remainder of the St. George Terminal area.
3. **Restoration of Landscape:**

   All excess materials and debris shall be removed by the Company, as part of the site restoration. All soil contaminated with excess material and debris will also be removed and replaced with acceptable topsoil. Outside the drip line of trees, soil compacted during the course of the project will be uncompacted and loosened to the depth of one (1) foot prior to grass seeding. Under no circumstances may heavy equipment (e.g. payloaders) be used to accomplish site restoration within the drip line of trees. In these root-sensitive areas, work must be done by hand using only light equipment.

   Damage to trees, both above and below ground will be repaired or replaced by an approved tree-care professional according to Parks Department standards. Trees severely damaged will be replaced in quantity according to the Parks Department latest modified basal area conversion chart. Both trees and newly seeded turf areas shall be cared for and watered by the Company as often as is necessary during their first growing year to establish their health and vigor after the stress of transplanting / germination and allow them to thrive in future without additional watering and care. Plants not established properly after one year will be replaced and established as many times as is required for successful establishment.

56. **VARIABLE MESSAGE SIGNS**

   Unless otherwise specified, all variable message signs and display units used in this Contract shall become property of the City of New York at the end of the construction. They shall be carefully removed and stored at the site in a manner acceptable to the Resident Engineer for pick-up by New York City.

57. **SALVAGE – LIGHTING STANDARDS AND LUMINARIES**

   Unless otherwise specified, all existing lighting standards, luminaries, and under bridge luminaries scheduled for removal are to be carefully removed from the structure, salvaged, and stored at the site in a manner acceptable to the Resident Engineer for pickup by New York City.

58. **CHAIN LINK FENCE**

   All chain link fences shall be covered with black vinyl coating.

59. **STAGING AREA**

   The Company will be permitted to use space under the Bus Station South to site their construction trailers as well as the Engineer’s Office. Specific location is to be coordinated with NYCDOT – Passenger Transport Division.

   Storage containers and equipment may be stored adjacent to the construction trailers. Other areas may also be available in the North Municipal Lot. During the execution of the contract, the Company shall arrange to meet with the entities having jurisdiction over
the additional areas that may be available to work out the details of such areas, which include size, location, access, etc. However, no areas other than those specified in this RFP, shall be used without written authorization from the entities having jurisdiction over them.

60. **NYSDEC REQUIREMENTS**

No runoff, concrete wash, or any other type of waste water from the construction site shall enter any waterway, tributary, or wet lands. The Company shall prevent this from occurring by utilizing methods, such as installing silt fence, filter fabric, or hay bales, etc.

61. **PROTECTIVE SHIELD**

In addition to the following requirements, protective shielding over SIRTOA’s ROW must satisfy the requirements given in Section 2 of Exhibit G – Railroad Requirements.

1. Due to the conditions and activities existing at the location of this contract, the Company will be required, in addition to complying with all federal, state, and local laws and regulations and the requirements contained in the proposal and the standard specifications pertaining to the safety and health of individuals and the protection of property, to provide and maintain a specific level of protection in locations as shown or noted on drawings and as described below.

2. The Company will be required to provide, maintain, and remove protective shields placed under the structure.

3. The construction of the protective shields will be such as to prevent any dust, debris, concrete, form work, paint, or tools from falling on the areas below the structure.

4. The protective shields shall be erected prior to the start of any work over any particular area. The Resident Engineer will be the sole judge as to whether or not sufficient protection has been provided to perform the work over any particular area.

5. The protective shields shall remain in place until all work over any particular area has been completed and shall be removed only when ordered by the Resident Engineer. Prior to removal, the devices shall be cleaned to the satisfaction of the Resident Engineer.

6. To minimize the inconvenience to the users of the areas below, the Company will be required to complete the actual erection and removal of the protective shields over any particular area in an efficient and timely manner as determined by the Resident Engineer.

7. The erected protective shields shall not infringe on any legal, minimum vertical clearance shown on the plans or hinder access and egress below the structure. Areas of access to the devices shall be approved by the Resident Engineer.
8. The Company will be required to obtain the approval of the Resident Engineer before commencing any work beneath the protective shields. In certain areas, depending on the nature of the work, the Resident Engineer may require a specific method of protection.

9. Prior to the start of construction, the Company will be required to submit the details of the above noted protections to New York City DOT Engineer-in-Charge, who will review and approve the details only as to the methods of erection and as to whether or not the proposed installations will provide the level of protection required at the various locations. It is the Company's responsibility to design these protections so that they are in conformance with all existing laws, regulations and specifications that govern this type of work.

10. If during the actual construction the Resident Engineer deems that the protection devices are not providing the desired level of protection or that the Company has failed to properly maintain the devices, all work at the affected locations shall cease until corrective measures acceptable to the Resident Engineer are instituted.

11. The Company shall repair, at no cost to NYC, all damage to the structures resulting from the use of these devices. All repair methods shall be acceptable to the Resident Engineer.

12. The cost of all the above noted work shall be included in the price bid for the various items of the Contract.

13. The protective shield shall be capable of supporting a uniform live load of 100 pounds per square foot (psf) over its entire surface and a concentrated live load of 2000 pounds so placed to produces maximum stresses. The Company will not be permitted to stockpile materials or equipment on these shields. The protective shields are to be kept clean and clear of debris as directed by the Resident Engineer.

14. The vertical protective shields shall be designed for 30 psf uniform horizontal load acting on all vertical surfaces.

62. COMPANY INITIATED VALUED ENGINEERING CHANGE PROPOSALS (CIVEC)

NOTE: COMPANY INITIATED VALUE ENGINEERING CHANGE PROPOSALS ARE DIFFERENT THAN A VALUE ENGINEERING WORKSHOP FUNDED BY THE CITY OF NEW YORK.

ANY COST SAVINGS RESULTING FROM A VALUE ENGINEERING WORKSHOP WILL BE EXCLUSIVELY FOR THE BENEFIT OF THE CITY OF NEW YORK UNLESS THE WORKSHOP SPECIFICALLY PROPOSES OTHERWISE.

A. Purpose and Scope
The term “proposal” as used in this Subsection is construed to mean a Company Initiated Value Engineering Change (CIVEC) Proposal submitted by the Company for changing the Plans, Specifications, or other requirements of the Contract. The Value Engineering Change Proposal shall conform to the following:

It is the intent of this provision to share with the Company any cost savings which may be generated on this Contract as the result of CIVEC Proposals offered by the Company and approved by NYCDOT. The purpose is to encourage the use of the Company’s ingenuity and experience in arriving at an alternative, lower cost with any time-saving construction methods other than those reflected in the Contract Documents, by the sharing of savings resulting therefrom. The proposals contemplated are those that could produce a savings to the NYCDOT without, in the sole judgement of the Director of Design Build / Emergency Contracts, impairing the essential functions and characteristics of the Project or a portion of the Work involved. They include, but are not limited to: safety, service life, stage construction, economy of operations, ease and desired appearance.

B. Submittal of CIVEC Proposals

The Company may submit a CIVEC Proposal only after the Award of the Contract.

B.1 Submittal of Initial CIVEC Proposal

An Initial Proposal is required for all CIVEC proposals and shall outline the general technical concepts associated with the proposal and the estimated savings which will result. The Initial Proposal will be reviewed by NYCDOT and, if found to be conceptually acceptable, approval to submit a Final Proposal will be granted by NYCDOT. A finding of “conceptual acceptability” of the Initial Proposal however, in no way obligates NYCDOT to approve the Final Proposal. Further, the Company shall have no claim against the City as a result of the rejection of any such initial or final proposal.

B.2 Submittal of Final CIVEC Proposal

At a minimum, the following materials and information shall be submitted with each CIVEC proposal, plus any additional information requested by NYCDOT.

a.) A statement that the CIVEC is submitted as the “Final Value Engineering Change Proposal,” as per NYCDOT approval of the Initial CIVEC Proposal.
b.) A description of the difference between the existing contract requirements and the proposed change, and the comparative advantages of each, including consideration of service life, economy of operation, ease of maintenance, desired appearance and safety.
c.) Complete plans and specifications showing the proposed revisions relative to the original contract features and requirements.
d.) A complete cost analysis indicating the Final Estimate costs and quantities to be replaced by the CIVEC Proposal, the new costs and quantities generated by the CIVEC Proposal, the new changes on operations, maintenance and other considerations.
e) Pursuant to the Agreement, Value Engineering Change Proposals are considered Change Orders, therefore a statement of the time by which adopting the proposal must be executed so as to obtain the maximum benefit during the remainder of the Contract is required. The date must be selected to allow NYCDOT ample time for review and processing of the Change Order, but without affecting the Company’s schedule. Should NYCDOT find that insufficient time is available for review and processing it may reject the CIVEC proposal solely on such basis. If NYCDOT fails to respond by the date specified, the Company shall consider the CIVEC Proposal rejected unless otherwise notified in writing by NYCDOT; shall in any event have no claims against the City as a result thereof.

f) A statement as to the effect the CIVEC Proposal will have on the time for completion of the contract.

g) A description of any previous use or testing of the CIVEC Proposal on another NYCDOT project, indicate the date, Contact Number and the action taken by NYCDOT.

C. Conditions

CIVEC Proposals will not be considered in determining the selected proposer. CIVEC Proposals will only be considered after, and only when all of the following conditions are met:

1. The Company is cautioned not to base any price proposal on the anticipated approval of the CIVEC Proposal and to recognize that such proposal may be rejected and that the Company will thus, be required to complete the Contract in accordance with the requirements of the RFP.

2. All CIVEC Proposals, whether or not approved by NYCDOT for use in this contract, apply only to the on-going Contract or Contracts referenced in the CIVEC Proposal and become the property of NYCDOT without restrictions as may otherwise be imposed by the Company, on their use and disclosure. NYCDOT shall have the right to use, duplicate in whole or part any data necessary for the utilization of the proposal. NYCDOT retains the right to utilize any accepted CIVEC Proposal or part thereof, on any subsequent project without any obligation to the Company submitting.

3. The Company shall have no claim against the City for any costs or delays incidental to NYCDOT’s rejection or approval of a CIVEC proposal, including but not limited to development costs, anticipated profits, or increased material and labor costs resulting from delays in the review of such CIVEC proposal.

4. NYCDOT shall be the sole judge as to whether a CIVEC Proposal qualifies for consideration and evaluation. It may reject, at will, any CIVEC Proposal that requires excessive time or costs for review, evaluation and/or investigations, or which is not consistent with NYCDOT’s design policies and basic design criteria for the project; as such policies and criteria are stated in the Request for Proposal documents, as well as, for any other reason the NYCDOT deems appropriate.

5. The Commissioner may reject all or any portion of the work performed pursuant to an approved CIVEC Proposal if it is believed that unsatisfactory results are being
obtained. The Commissioner may direct the removal of such rejected work and require the Company to proceed in accordance with the original Contract requirements without reimbursement for any work performed under the CIVEC Proposal or for its removal. Where modifications to the CIVEC are approved are order to adjust to field or other conditions, reimbursement will be limited to the total amount payable for the work at the Contract bid prices as if it were construed in accordance with the original Contract requirements. Such rejection or limitation of reimbursement shall not constitute the basis of any claim against the City for delay or any other costs.

6. The CIVEC Proposal shall not be experimental in nature but shall have been proven to the NYCDOT’s satisfaction under similar or acceptable conditions on another NYCDOT project or at another location acceptable to NYCDOT.

7. CIVEC Proposals shall be considered only for equivalent options not already provided for in the Contract documents.

8. The savings generated by the CIVEC Proposal must be of sufficient significance, in the sole judgement of NYCDOT, to warrant the review and processing.

9. A CIVEC Proposal changing the types and or thickness of the pavement structure will not be considered.

10. If additional information is deemed necessary by the Commissioner to evaluate the CIVEC Proposal, this information must be provided in a timely manner to allow sufficient review time for review. Failure to do so will result in rejection of the CIVEC Proposal. Such additional information should include but not be limited to design changes, field investigation and survey results design computations and field change sheets.

11. No change to the work shall be considered as CIVEC eligible, if they are the result of design errors or omissions which would have needed correction notwithstanding any CIVEC provision in the Specifications; even if the need for such correction is first brought to the Commissioner’s attention by the Company.

D. Payments

If the CIVEC Proposal is accepted by NYCDOT, the changes and payments will be made in accordance with applicable Procurement Policy Board (PPB) Rules. Reimbursement to the Company will be made as follows:

1. The changes will be incorporated into the original Contract Proposal as submitted by the Company via changes in the amount of lump sum items and new agreed priced items, as appropriate.

2. The cost of the revised work as determined from the aforementioned changes in the new items will be paid directly and based on percentage of work completed for each item on a monthly basis. In addition to such payments, the NYCDOT will pay to the
Company, 50 percent of the cost savings to NYCDOT as reflected by the difference between the above payment and the cost of the related construction required by the original Contract plans and specifications and submitted by the Company with its original price proposal. This cost savings will be released to the Company as one lump sum amount at the time of substantial completion of all work affected by the CIVEC Proposal.

3. The Company’s cost for development, design and implementation of the CIVEC Proposal are not eligible for reimbursement.

4. The Company may submit CIVEC Proposals for an approved subcontract, provided that reimbursement is made by NYCDOT to the Company and that the terms of the pass through to the subcontractor are satisfactorily negotiated and accepted by the Company and Subcontractor before the CIVEC Proposal is submitted to NYCDOT. Subcontractors may not otherwise submit a CIVEC Proposal, except through the Prime Company.

63. MILESTONES, INCENTIVE PAYMENTS AND DISINCENTIVE AND LIQUIDATED DAMAGE ASSESSMENTS

The timely execution of this contract is essential to the smooth flow of the Staten Island Ferry, Staten Island Railway and NYC Transit - Bus operations at the St. George Terminal; and to minimizing inconveniences to users of commuter parking facilities, passenger drop-off and pick-up areas, taxi services and pedestrian thoroughfares as well as to the Community’s quality of life including but not limited to services such as police operations, the use of the adjacent Richmond County Bank Stadium, etc.

The following milestones are incorporated in this Contract.

Milestone A – Pre-Construction Duration

Timely completion for this milestone is of the essence. The City will assess liquidated damages to ensure that schedule adherence is accomplished and costs related to contract administration and maintenance of structures that are in poor condition are avoided.

Measures such as obtaining expeditious design and shop drawing approvals to the extent necessary to ensure timely fabrication of critical path items and timely mobilization at the site should be anticipated to ensure that Milestone A is met.

The intention of Milestone A is to ensure that the Company performs and receives approval for adequate preparatory work, such as MPT schemes, design plans, shop drawings, etc., as indicated in their Design Deliverable Submission Schedule, in order to assure that construction activities, once started, will be carried out with continuity. It should be noted that Milestone B commences immediately after completion of Milestone A.

The Company will be assessed $3,000.00 per day for each consecutive calendar day that the Pre-Construction duration exceeds the duration specified by the Company in...
Schedule A. Pre-Construction duration is defined as the number of consecutive calendar days from the day the Notice to Proceed is given to the day of site mobilization for the purposes of executing the scope of work. THERE IS NO LIMIT ON THE AMOUNT OF LIQUIDATED DAMAGES. Liquidated damages assessment commences the first instant the milestone period is exceeded and will be applied for each consecutive calendar day up to the day that the Company actually mobilizes at the site to commence construction.

The NYCDOT Commissioner or his/her duly authorized representative will be the sole authority in determining when this milestone has been met.

**Milestone B – Construction Duration**

Timely completion of this milestone is of the essence. The city is providing an incentive payment and a disincentive assessment to ensure schedule adherence and to minimize costs to ferry operations, parking lot operations, SIRTOA and NYC Transit Bus Operations as well as continued inconvenience to pedestrians and taxis and finally NYCDOT’s extended costs related to contract supervision.

Milestone B consists of all work necessary to accomplish completion of all proposed work as such work is identified in Exhibit E, Scope of Work.

Milestone B commences on the day the Company mobilizes at the site for the purpose of executing the contract scope of work. Milestone B is complete the day NYCDOT deems the project substantially complete.

Measures such as doubling work crews, working on more than one structure at a time, and/or 7 day workweeks will be permitted and should be anticipated, in accordance with the Exhibit for Maintenance and Protection of Traffic and in accordance with the hours of operations allocated by SIRTOA and NYC Transit-Buses to ensure that Milestone B is completed on schedule.

The Company will be given $16,000.00 per calendar day INCENTIVE, for each consecutive calendar day the construction duration is completed prior to the Construction Duration specified in Schedule A, and submitted by the Company with its Technical Proposal, up to a maximum of two hundred (200) calendar days (maximum incentive amount is $3,200,000). The contact price for this item shall be a fixed lump sum (FPLS) of the amount as shown against this item in the Price Proposal (Item NYC-1943 of Price Proposal, Book 1 of 2, Administrative Requirements). The proposer shall not alter this presented amount. Should the amount be altered, the figures will be discarded and the pre-entered price and amount will be used to determine the total price proposal amount for this Contract. The Company shall be entitled to payment for this item as follows: To determine the actual lump sum payment incentive under this pay item, the number of calendar days actually required to accomplish the work will be compared with the number of calendar days specified as Construction Duration in Schedule A. Should the number of calendar days required to complete the work be less than that specified as Construction Duration in Schedule A for the same work, the difference will be multiplied by $16,000.00 as the daily incentive amount, and the product (lump sum) will be paid to the Company as an incentive. However, the incentive shall not exceed the amount of
$3,200,000. Incentive payment(s) will be paid to the Company upon substantial completion of the work. Payment for material or design changes in order to accelerate the work will not be paid under this item.

The Company will be assessed a DISINCENTIVE of $16,000.00 per calendar day for each consecutive calendar day the Construction Duration work as submitted by the Company in its technical proposal, is completed after the duration specified in Schedule A. THERE ARE NO LIMITS ON THE AMOUNT OF DISINCENTIVE ASSESSMENT. Disincentive assessment may be made against monies due the company, and will be assessed beginning the first day the milestone period is exceeded. The NYCDOT Commissioner or his/her authorized representative will be the sole authority in determining when the work for this milestone is complete.

64. SECURITY FENCING
Security fencing, gates and cameras are being installed around the perimeter of the St. George Terminal under a separate contract titled St. George Station – Security Package. This contract is scheduled to be complete prior to award of this D/B Contract. Pertinent sheets from this contract will be given to the short listed Proposers along with the other Available Reference Material listed in Section 12 of Exhibit A in Book 2: Volume 1.

The Company is advised that all construction operations must be conducted in a manner that does not in any way disturb or compromise any element of this Security Package. This includes but is not limited to removing/relocating security fencing, blocking security gates and obstructing security camera views. In unique circumstances the Company may petition NYCDOT Passenger Transport Division for a waiver from this requirement where it can be proven that no viable alternative exists.

65. STORAGE DRUMS
The Company shall be aware that NYCDOT – Ferries stores waste fuel oil in 55 gallon drums in a secure area under the Old Viaduct (BIN 2269790). They are stored on site for routine pick-up by a certified disposal service. Should the Contactor need to gain access to this area to perform work it will be necessary to notify Ferries at least two weeks in advance so that proper arrangements can be made.

66. SOP 2006-BR006 PROCEDURE FOR WHEN A REGULATOR COMES TO THE WORK SITE (AUGUST 20, 2004)

THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK
DEPARTMENT OF TRANSPORTATION

Environmental Policy and Procedures

Procurement for When a Regulator comes to the Work Site

August 20, 2004

Scope of This Procedure

Many of the Department of Transportation’s activities are governed by Federal, State and Local laws and regulations. DOT also must ensure that all outside contractors comply with all relevant laws and regulations.

BACKGROUND

There are numerous agencies that regulate DOT’s operations and are responsible for ensuring that the applicable laws, regulations, and permit requirements are being followed. These regulatory agencies routinely inspect the facilities they regulate (e.g. annually, semi-annually, or more frequently) to see if they are following the regulations or meeting their permit requirements. Regulatory agencies also respond to complaints and inspect work operations when they may have reason to believe there is a suspected violation of a law or a permit requirement. In either case, DOT work sites may be visited by a regulator at any time.

The following is a list of potential regulators. The list is not exhaustive.

- New York State Department of Environmental Conservation (DEC)
- Army Corps of Engineers (ACOE)
- United States Coast Guard (USCG)
- United States Environmental Protection Agency (EPA)
- Federal Park Police
- State Police
- New York City Department of Environmental Protection (DEP)
- New York City Parks Department (NYC Parks)
- New York City Fire Department (FDNY)
- New York State Department of Agriculture and Markets (NYSDAM)

Types of Work DOT and DOT’s Contractors Perform

There are different types of construction work that DOT and DOT’s contractors perform including but not limited to cutting, burning, replacing steel and concrete, recessing and replacing plates, drilling into or near riverbanks, working in and under water, sand-blasting, drilling into or near wetlands, and removing
Procedure for When a Regulator comes to the Work Site

excavated material (contaminated, hazardous, non-hazardous or unclassified). DOT operates the Staten Island Ferry, repairs streets, potholes and other street defects and operates asphalt plants.

Types of Activities Requiring Permits from Regulatory Agencies

There are different types of work that require a permit, license or registration. These permits can be required by Federal, State or City agencies depending on the activity. A list of activities that require some form of regulatory approval is shown below. This list is not exhaustive but is meant to provide a representative example of the types of work that require a permit and/or notification to the regulatory agency.

- Work over water - Clean Water Act, nothing can be added to the water.
- In all tidal wetlands and adjacent areas - activities include but are not limited to dredging and filling, grading, construction of structures and accessory structures, driving piles and placement of any type of land stabilization measures - DEC and ACOE.
- In a Navigable Waterway - DEC, ACOE and USCG.
- In or near a bulkhead - DEC and ACOE.
- Certain storm water discharges from construction activities - DEC.
- Bridge work requiring that movable bridges stay closed - USCG.
- Sewer work and discharges into the City sewer system – DEP.
- Uses and storage of certain chemicals (depending on type and amount) - DEC, DEP.
- Removal of trees, entry into a park, or alteration of City, State or Federal parkland - applicable Parks oversight agency.
- Fueling facilities either on land or on water (Ferries) – DEC, Coast Guard, ACOE.
- Above ground and under ground storage tanks including heating oil tanks, DEC, EPA, FDNY.
- Storage, transportation and disposal of solid waste, hazardous waste and used waste oil – EPA, DEC, DEP.
- Asphalt operations – DEC, DEP.

Interaction with Regulators

It is important to interact with regulators in a polite, honest, forthright, and professional manner and to cooperate fully with the inspector. When a person identifying him/her self as a representative of a City, State or Federal agency arrives on the scene to conduct an inspection, employees are to cooperate fully with the inspector.

Responsibilities of Personnel Meeting the Regulator

1. Introduce yourself and your job title.

2. Ensure that safety is maintained, and that the inspector’s presence does not cause any safety concerns.

3. Inform the inspector that it is DOT policy to notify the Supervisor or responsible manager in charge who will accompany the inspector throughout the visit.
Procedure for When a Regulator comes to the Work Site

4. If the Supervisor or responsible manager in charge is unavailable, get the next Senior Person on the job to accompany the inspector.

Responsibilities of the Supervisor in Charge When Interacting with Regulators

1. Introduce yourself and your job title.

2. Ask to see the regulator’s credentials, ID badge, business card or other contact information. (Only individuals with valid credentials should be allowed on the work site).

3. Begin your record of the visit immediately. Write down the Name of the inspector, the Name of the Agency, and the Date and Time of the visit.

4. Be direct, straight forward and tell the truth.

5. Full disclosure is important. Never mislead or lie to a regulator. Willfully misleading or lying to a regulator is punishable criminal offenses.

6. If you have information that is relevant, provide it even though the regulator does not ask for it.

7. Remember, while the activity under inspection/investigation may not itself be problematic, misleading a federal or state employee may carries serious consequences for the employee and the agency.

8. Also, mistakes occur, people misspeak. If so, correct the error immediately. If you later learn of a reporting error correct it immediately.

A regulator may want to see several things at the work site and will be asking you routine questions. Some typical requests are shown below.

a) Paperwork

1) Ensure that all the appropriate paperwork is readily available at the site and that it conforms to the requirements of the applicable laws or regulations.

2) Review all work permits and make sure they are posted properly.

3) Provide all the paperwork when asked.

b) Site Inspection

1) Fully comply with any effort to inspect the work site.

2) Do not hinder in any manner any authorized inspection.

c) Questions Concerning the Project
Procedure for When a Regulator comes to the Work Site

1) Answer all questions about the project truthfully and to the best of your knowledge.

2) Do not hide any facts from a regulator. Rather, offer relevant information to the inspector on your own.

3) If you do not know the answer, tell the inspector that you will get back to him/her with the answer.

d) Create Your Own Record of the Visit

1) Take your own notes during the inspection and document what questions are asked.

Supervisor Responsibilities after the Regulator Leaves the Work Site

1. Report the visit from a regulator to the following:

a) Deputy Commissioner of your Division.

b) Environmental Liaison from your Division;

<table>
<thead>
<tr>
<th>Division</th>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridges</td>
<td>Russell Holcomb</td>
<td>(212) 788-1700</td>
</tr>
<tr>
<td>Bridges: (Capital Projects)</td>
<td>John Kurre</td>
<td>(212) 788-2083</td>
</tr>
<tr>
<td>Roadway Repair</td>
<td>Alice Cortes</td>
<td>(212) 487-8425</td>
</tr>
<tr>
<td>Traffic</td>
<td>Joseph Donini</td>
<td>(718) 433-3128</td>
</tr>
<tr>
<td>Passenger Transport</td>
<td>Jai Therattil</td>
<td>(212) 487-8311</td>
</tr>
<tr>
<td>Sidewalks &amp; Inspection</td>
<td>Keith Howard</td>
<td>(718) 391-2748</td>
</tr>
<tr>
<td>Facilities</td>
<td>Raymond Singh</td>
<td>(718) 793-7316</td>
</tr>
<tr>
<td>Ferries</td>
<td>William Kain</td>
<td>(718) 676-6103</td>
</tr>
<tr>
<td>Ferries</td>
<td>Don Westlye</td>
<td>(718) 876-8336</td>
</tr>
</tbody>
</table>

c) Office of Environmental Compliance Assessment (212) 442-7730.

2. You may be asked to prepare an internal memorandum concerning the regulator’s visit.

a) Do so immediately.

b) Limit the distribution of the internal memorandum to the appropriate DOT officials and the DOT General Counsel’s Office of Environmental Compliance Assessment.
Checklist for distribution of Environmental Procedures – to be used as a tool to assist divisions in distributing and training staff to environmental procedures.

1) Division’s Deputy Commissioner has reviewed and approved the procedure.

2) Procedure has been adopted by the Environmental Committee.

3) Procedure has been officially adopted by Division as Division SOP (given number etc.).

4) Liaisons have reviewed procedure to ensure that any equipment or resources that are needed to comply with the procedure are in place at every location. For example, the spill procedure requires spill clean up material/equipment and PPE.

5) Procedure has been distributed to all staff (liaisons should keep records of employee acceptance of procedure).

6) All supervisors have thoroughly reviewed the procedure and are prepared to review procedure with staff.

7) All staff at every location where the procedure applies are trained by the Supervisor or other responsible manager as to their responsibilities under the procedure. Training consists of taking the appropriate time necessary to review the procedure and answer any employee questions regarding their responsibility under the procedure.

8) Such training sessions are documented with date and list of employee attendance.

Since there will be numerous environmental procedures that will be distributed under DOT’s environmental program, OCEA’s recommendation is that each Division keep a book/binder at every location to hold all of the environmental procedures.

December 8, 2005
67. **PRICE TO INCLUDE**

No direct payment will be made for the costs incurred in complying with the foregoing special provisions unless otherwise provided. Said costs shall be deemed to have been included in the price bid.
EXHIBIT I
CLEANING AND PAINTING
REQUIREMENTS
**Book 2**  
**EXHIBIT I**  

**CLEANING AND PAINTING REQUIREMENTS**  

**TABLE OF CONTENTS**

<table>
<thead>
<tr>
<th>SECTION</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SCOPE OF WORK</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PRELIMINARY QUANTITIES</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ADDITIONAL NYCT REQUIREMENTS FOR ENVIRONMENTAL PROTECTION AND WASTE REMOVAL</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>NYCDOT SPECIFICATION 831 FOR PAINTING</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>NYCDOT SPECIFICATION 832 FOR LEAD PAINT REMOVAL WORKER / ENVIRONMENTAL PROTECTION AND WASTE HANDLING</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 1

SCOPE OF WORK
1.0 GENERAL DESCRIPTION

The project scope includes abrasive blast cleaning and painting of all exposed structural steel including that on the Bus Exit Ramp – Old Viaduct (BIN 2269790) once concrete encasement has been removed.

A lead paint survey was conducted on all eight steel structures in the project. Based on the findings of this survey it has been determined that seven of the eight structures have lead-based paint throughout. The eighth structure, Bus Exit Ramp – Old Viaduct (BIN 2269790) has lead-based paint on the south column of Bent 7 and presumably on the east fascia beam at Bent 7 but the encased steel appears to be unpainted. Two areas of exposed steel were accessible for sampling. Analysis results showed a lead concentration of only 0.03% by weight for both samples which is well below the EPA threshold of 0.5% by weight. Proposers shall assume for the purposes of bidding the work that other than the south column and east fascia beam at Bent 7 there is no lead based paint on the Bus Exit Ramp – Old Viaduct (BIN 2269790). However, prior to beginning encasement removal operations the Company will be required to perform additional sampling in at least four other locations throughout the structure where there is exposed steel to confirm this assumption. If by analysis it is shown that unacceptable levels of lead are present then the Company will be required to perform all operations which disturb the lead paint in accordance with the Lead Paint Removal Specifications contained in this Exhibit. Costs to perform this additional work will be covered under a Change Order to the Contract.

For more detailed information on the lead paint survey conducted for this project, see the Lead Paint Survey Report in Section 8 of Exhibit A in Book 2: Volume 1.

More than half of the cleaning and painting work for this project will be on or over SIRTOA’s ROW. All work on SIRTOA’s property must be conducted in accordance with the requirements stipulated in Exhibit G – Railroad Requirements of Book 2: Volume 2. For the limits of SIRTOA’s property see drawing G-2, Key Substructure Plan – Cleaning and Painting Scope in Section 2 of Exhibit E – Scope of Work in Book 2: Volume 2.

1.1 LEAD PAINT REMOVAL

a) The installation and use of containment systems for each specified method(s) of cleaning and/or paint removal/disturbance that will take place on this project as well as the protection of the public, workers and the environment and implementation of a waste disposal plan shall conform to NYCDOT’s Section 832 Specification for Lead Paint Removal – Worker and Environmental Protection and Waste Handling (see Section 5 of this Exhibit).

b) Additionally, when paint removal is to occur on SIRTOA property, the Company will be required to satisfy the additional requirements listed in Section 3 of this Exhibit in order to comply with NYCT’s Specification Section 12LL – Environmental Protection and Waste Disposal.

c) Abrasive blasting shall be performed inside a Class 1A Containment System wherever there is sufficient clearance to erect and maintain such a system, as defined in SSPC Guide 6 and Table 1 of Section 832. The containment system shall be composed of impermeable material with fully sealed joints, and of sufficient strength and integrity to facilitate the collection and holding of water and debris for proper disposal.

d) If the Company can demonstrate to the satisfaction of the Resident Engineer that it is not possible to
erect and maintain a Class 1A Containment System over SIRTOA’s ROW then vacuum-shrouded abrasive blast cleaning shall be performed inside of a Class 2A Containment System as defined in Table 1 of Section 3 of this Exhibit. The Company may propose a less stringent containment system for vacuum-shrouded blasting only after it can be shown through visual assessments and air monitoring results that a tight seal around the blast head can be maintained. No changes in containment requirements shall be allowed until the Resident Engineer has granted approval.

e) If vacuum-shrouded abrasive blast cleaning is required due to clearance restrictions in areas not over SIRTOA ROW it shall be performed inside of a Class 4A Containment System as defined in Table 1 of Section 832.

f) If the Company can demonstrate to the satisfaction of the Resident Engineer that it is not possible to perform vacuum shrouded abrasive blast cleaning due to clearance restrictions then power tool cleaning with vacuum attachments shall be performed inside of a Class 3P Containment System as defined in Table 1 of Section 3 of this Exhibit when on/over SIRTOA ROW.

g) If power tool cleaning is required due to clearance restrictions in areas not on/over SIRTOA ROW it shall be performed inside of a Class 3P Containment System as defined in Table 1 of Section 832.

h) Proposers shall assume the most costly form of containment when bidding the project. Rejection of a proposed containment system type will not be considered grounds for a change order.

i) The Resident Engineer’s Environmental Consultant (referred to as the “Consultant”) will conduct visual assessments of emissions and releases into the environment including air, soil and water, monitor Company’s compliance with this specification and will also perform High Volume Ambient Air Monitoring using equipment provided by and maintained by the Company as detailed in this Exhibit. The Company shall assist and cooperate with the Resident Engineer’s Consultant in performance of the Consultant’s work.

1. The Company shall comply with the requirements for assessment of visible emissions, releases, and High Volume Ambient Air Monitoring continuously throughout the workday, as stipulated in this Exhibit.

2. The Company shall coordinate all monitoring activities with the Consultant and accept the assessment and results of the testing and inspection performed by the Consultant.

3. The Company shall comply with any Consultant directions transmitted through the Resident Engineer to stop applicable operations when emissions or releases exceed the requirements of this Exhibit. The Company shall undertake all necessary corrective action to control emissions and clean up the area.

4. The Company shall conduct work site clean-up throughout the Contract. The clean up shall include the removal of all litter or debris on a daily basis. Paint chips found on the street, sidewalks and/or station platforms near the project structures, within the contract limits, shall be collected with a HEPA vacuum and shall be stored and disposed of as in accordance with 3.05 of Section 832. Overnight accumulation of lead-containing waste/debris within the containment shall not be permitted. All lead containing waste/debris shall be placed in approved containers at the end of each workday.

j) The Company shall furnish all labor, materials, equipment, services, insurance and permits necessary to protect the public, workers and the environment by means of containment, collection and removal of paint and dust, corrosion residues, spent abrasives, newly applied paint, and other materials used in or resulting from the paint removal, washing and painting operations.
k) The Company shall comply with the requirements of this Exhibit and all applicable Federal, State, and Local laws, codes, and regulations, including but not limited to the regulations of the United States Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA), New York State Department of Environmental Conservation (NYSDC), New York State Department of Health (NYSDOH), the New York State Department of Labor (NYSDOL), the New York City Department of Environmental Protection (NYCDEP), and NYCT Policy Instructions (PIs) 10.27.1 “Environmental Management” Chapter 2 – Hazardous Waste Management and 10.33.0 “Lead Particulate Management”.

1.2 PAINTING

a) The workmanship requirements for conducting surface preparation and painting activities shall conform to NYCDOT’s Section 831 Specification for Painting (See Section 4 of this Exhibit).

b) The Company or the painting subcontractor that is directly performing the field cleaning and painting work shall possess SSPC-QP1 and QP2 certifications at the time of bid and throughout the duration of the project.

c) If new steel is utilized on the project, either for the proposed superstructure replacement at Ramp A or for the proposed reconstruction of the North Ramp, the Company or subcontractor that is directly performing the cleaning and shop painting work shall possess SSPC QP-3 or AISC SPE certifications at the time of bid and throughout the duration of the project.

d) The surface preparation for all abrasive blast cleaned steel shall be meet the SSPC standards for SP 10 – Near White Blast Cleaning. The surface preparation for power tool cleaned steel shall meet the SSPC standards for SP 11 – Power Tool Cleaning to Bare Metal.

e) Two paint systems will be utilized on the existing steel. Paint System B’ shall be used for interior superstructure framing and columns not directly exposed to sunlight. For fascia beams and columns exposed to direct sunlight, Paint System K’ shall be used.

f) Paint System B’ involves a stripe and full coat of epoxy zinc rich primer/strip coat of epoxy penetrating sealer/full coat of epoxy intermediate/and a full coat of urethane finish. Paint System B’ shall meet the requirements given in Appendix C – Paint System Tables in Specification Section 831 (see Section 4 of this Exhibit).

g) Paint System K’ involves a stripe and full coat of epoxy zinc rich primer/strip coat of epoxy penetrating sealer/full coat of epoxy intermediate/and a full coat of polysiloxane finish. Paint System K’ shall meet the requirements given in Appendix C – Paint System Tables in Specification Section 831 (see Section 4 of this Exhibit). This system is specified for all steel members exposed to direct sunlight because of its superior color retention properties.

h) The paint system for new steel shall be Paint System A. This system is used for the shop painting of new steel with a coat of inorganic zinc primer (with a wet on wet stripe coat), a stripe and full coat of epoxy intermediate and a full coat of urethane finish. For System A, all coats are applied in the shop followed by touch-up in the field. Paint System A shall meet the requirements given in Appendix C – Paint System Tables in Specification Section 831 (see Section 4 of this Exhibit).

i) For new steel exposed to direct sunlight (e.g. fascia beams), the paint system shall be the same as that specified for Paint System A for the bottom two coats and Paint System K’ for the top two coats.

1.3 FINISH COLOR

The finish color of the steel must be approved by the Art Commission. The Company is
strongly advised to submit finish color recommendations to the Art Commission as soon as possible after NTP to allow sufficient time for review and approval.

Currently the only approved paint colors for the Art Commission to choose from are:
1) Munsel Grey (Fed Color No. 26173)
2) Dark Green (Fed Color No. 34092)
3) Blue (Fed Color No. 15095)
4) Pulaski Red (Custom color made from sample)
5) Deep Cool Red (Custom color made from sample)

If Munsel Grey is the selected finish color there will be no need to use Paint System K’ for sun exposed surfaces since color retention is not a significant concern with this light color finish. All existing steel surfaces will be painted with Paint System B’.
SECTION 2
PRELIMINARY QUANTITIES
# Preliminary Quantities for Lead Removal & Painting

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GENERAL</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worker Protection</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Environmental Protection and Project Clean-Up</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Treatment and Disposal of Paint Removal Waste and Waste Water</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>RAMP A (BIN 2270180)</strong></td>
<td></td>
<td></td>
<td>May require shop painting if steel superstructure is selected. Cost to be included in Ramp A - Superstructure Replacement</td>
</tr>
<tr>
<td>No items specified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RAMP B (BIN 2269770)</strong></td>
<td></td>
<td></td>
<td>Will require Class 1A and potentially 3P if power tool cleaning is required for columns in track area</td>
</tr>
<tr>
<td>Containment System</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>System B' - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of interior framing and columns is 138,000 and 19,600 respectively</td>
</tr>
<tr>
<td>System K' - Total Coating Replacement&lt;sup&gt;3,4&lt;/sup&gt;</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of exterior framing and columns is 12,000 and 15,000 respectively</td>
</tr>
<tr>
<td><strong>RAMP C (BIN 2268780)</strong></td>
<td></td>
<td></td>
<td>Will require Class 1A and potentially 3P if power tool cleaning is required for columns in track area</td>
</tr>
<tr>
<td>Containment System</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>System B' - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of interior framing is 24,400</td>
</tr>
<tr>
<td>System K' - Total Coating Replacement&lt;sup&gt;3,4&lt;/sup&gt;</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of exterior framing and columns is 2,500 and 800 respectively</td>
</tr>
<tr>
<td><strong>RAMP D (BIN 2269730)</strong></td>
<td></td>
<td></td>
<td>Will require Class 1A and potentially 3P if power tool cleaning is required for columns in track area</td>
</tr>
<tr>
<td>Containment System</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>System B' - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of interior framing is 55,200</td>
</tr>
<tr>
<td>System K' - Total Coating Replacement&lt;sup&gt;3,5&lt;/sup&gt;</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of exterior framing and columns is 18,600 and 4,700 respectively</td>
</tr>
<tr>
<td><strong>OLD VIADUCT (BIN 2269790)</strong></td>
<td></td>
<td></td>
<td>Containment for lead removal is only required at the south column and east fascia beam of Bent 7</td>
</tr>
<tr>
<td>Containment System</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>System B' - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of interior framing and columns is 85,100 and 1,900 respectively</td>
</tr>
<tr>
<td>System K' - Total Coating Replacement&lt;sup&gt;3,4&lt;/sup&gt;</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of exterior framing and columns is 1,500 and 3,000 respectively</td>
</tr>
<tr>
<td><strong>BUS STATION SOUTH (BIN 2269750)</strong></td>
<td></td>
<td></td>
<td>Will require Class 1A and potentially 3P if power tool cleaning is required for columns in track area</td>
</tr>
<tr>
<td>Containment System</td>
<td>Lump Sum</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>System B' - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of interior framing and columns is 358,000 and 30,000 respectively</td>
</tr>
<tr>
<td>System K' - Total Coating Replacement&lt;sup&gt;3,4&lt;/sup&gt;</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of exterior framing and columns is 5,500 and 5,000 respectively</td>
</tr>
</tbody>
</table>

<sup>1</sup> Estimated SF of bus station canopy steel is 84,000
## PRELIMINARY QUANTITIES FOR LEAD REMOVAL & PAINTING

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BUS STATION NORTH (BIN 2269740)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Containment System</td>
<td>Lump Sum</td>
<td>1</td>
<td>Will require Class 1A and potentially 3P if power tool cleaning is required for columns in track area.</td>
</tr>
<tr>
<td>System B’ - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of interior framing and columns is 151,000 and 30,000 respectively. (This quantity also includes the two RR canopies on Platforms 9/10 and 11/12)</td>
</tr>
<tr>
<td>System K’ - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of exterior framing and columns is 2,000 and 1,500 respectively</td>
</tr>
<tr>
<td><strong>PEDESTRIAN BRIDGE (BIN 2270180)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Containment System</td>
<td>Lump Sum</td>
<td>1</td>
<td>Will require Class 1A and potentially 3P if power tool cleaning is required</td>
</tr>
<tr>
<td>System K’ - Total Coating Replacement</td>
<td>Lump Sum</td>
<td>1</td>
<td>Estimated SF of exterior framing and columns is 13,000 and 3,500 respectively</td>
</tr>
<tr>
<td><strong>NORTH RAMP (BIN 2269760)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Items specified</td>
<td></td>
<td></td>
<td>May require shop painting if steel superstructure is selected for new bridge. Cost to be included on North Ramp - Bridge Superstructure.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Demolition of existing North Ramp will require selective abatement - cost to be included in Demolition of Existing North Ramp.</td>
</tr>
</tbody>
</table>

### Notes:
1. Quantities are provided to give Proposers an overall sense of the magnitude of the cleaning and painting scope envisioned for this project. 
   **Proposers are responsible for performing their own quantity take-off for these items.**

2. The cost to perform the work related to Community Notification as specified in Section 832 should be included in the project's Community Outreach item.

3. The quantities for Paint System K’ are based on the assumption that the Art Commission will select a dark final paint color. Should they select to go with a lighter color such as Munsel Grey, NYCDOT reserves the right to eliminate Paint System K’ and use Paint System B’ exclusively. If this is the case then NYCDOT will look to receive a credit for the lower priced Paint System.

4. Quantities for Paint System K’ include the outside face and underside of the bottom flange for the fascia members and all surfaces of exterior columns.

5. Quantities for Paint System K’ include all surfaces of the fascia (through) girder and exterior columns on Ramp D.
SECTION 3

ADDITIONAL NYCT REQUIREMENT FOR ENVIRONMENTAL PROTECTION AND WASTE REMOVAL
3.0 GENERAL

Lead removal work on or over SIRTOA’s ROW must meet the additional requirements specified herein.

3.1 REVISIONS/ADDITIONS TO NYCDOT SECTION 832 – LEAD PAINT REMOVAL

a) Add the following to the end of 1.06 REFERENCE STANDARDS

I. New York City Transit (NYCT) Office of System Safety (OSS)
   1. NYCT’s Policy Instruction 10.27.1 Environmental Management, Chapter 2-Hazardous Waste Management
   2. NYCT’s Policy Instruction 10.33.0. Lead Particulate Management

b) Add the following to the end of Subsection B.4 of 3.03 CONTROL AND MONITORING OF RELEASES TO AIR, SOIL AND WATER

The requirement that the 288 second limit on emissions for the day (1% of an 8 Hour Day) shall be complied with regardless of the duration of the actual work shift which is worked. If the Contractor’s actual shift is 12 hours, the Contractor shall be limited to no more than 288 seconds of emissions for the day.

c) Add the following paragraph after Subsection B.5.c of 3.03 CONTROL AND MONITORING OF RELEASES TO AIR, SOIL AND WATER

   d) The Contractor shall provide the Environmental Consultant with continuous access to conduct visible emissions at each location where abrasive blasting is taking place. Dust emitting activities will not be allowed to take place unless the Environmental Consultant is able to view/inspect the containment.

d) Add the following paragraphs at the end of Subsection A of 3.04 CONTAINMENT

   7. The Contractor may use rigid or flexible containment materials of either tarps or plastic sheeting for the walls of the containment except when the containment utilizing abrasive blasting as the means of surface preparation takes place adjacent to an active track or roadway. The walls of the containment that face the active track shall be constructed out of rigid materials to prevent the containment from blowing into oncoming train or vehicular traffic.

   8. The Contractor shall be required to construct barriers composed of rigid material when blasting equipment, which includes but not limited to, dust collectors, blast pots, etc. are staged in a parking lane and when limits of the containment are immediately adjacent to or extends onto the sidewalk. The barriers shall not be less than 8 feet in height and shall be constructed to isolate the equipment and the containment from the sidewalk pedestrians. The barriers isolating the containment from the sidewalk shall be in addition to the Class 1A containment.

e) Add the following sentence at the end of Subsection C.1 of 3.04 CONTAINMENT

   Additionally the Company can not conduct any work on or over SIRTOA’s ROW until the drawings, calculations, and containment submittals have been reviewed and accepted by the NYCT Office of System Safety (OSS).
f) Add the following sentence at the end of Subsection E.2.b of 3.04 CONTAINMENT

If flexible platforms are used over SIRTOA’s ROW, the Contractor shall install three (3) separate layers of dust impenetrable tarps on the floor of the containment.

g) Add the following paragraph to the end of Subsection E.2 of 3.04 CONTAINMENT

f.) The Contractor shall be limited to using no more than four (4) blasters inside of a containment that utilizes abrasive blasting as the method of paint removal. This may further be reduced for small containment structures, as determined by the Engineer.

h) Add the following sentence to Subsection G.8 of 3.04 CONTAINMENT

When mechanical ventilation systems are used over on or over SIRTOA ROW, the Contractor shall provide filtration of the exhaust air, in order to prevent airborne particulate from being exhausted from the containment directly into the surrounding air, with a filtration efficiency of 99.97% or better at removing a monodispersed aerosol at 0.3 micrometers in diameter.

i) Add the following paragraph to the end of Subsection H of 3.04 CONTAINMENT

6. The Contractor shall maintain and protect all NYCT electrical, communications, signal, and lighting equipment including platform lights, track ties, switches and cables throughout the Contract. The material chosen to protect these items should be able to maintain its integrity during abrasive blasting operations.

3.2 NYCT TABLE 1 and FOOTNOTES

When working on or over SIRTOA’s ROW the Company’s containment system must meet the more stringent requirements of either Table 1 in Section 832 or Table 1 below from NYCT’s Specification 12LL - Environmental Protection and Waste Disposal.

**TABLE 1**

Containment Criteria for the Methods of Cleaning Painted Surfaces (Washing and Paint) Removal

<table>
<thead>
<tr>
<th>Methods of Cleaning</th>
<th>Containment SSPC Class</th>
<th>Containment Material Flexibility</th>
<th>Containment Material Permeability</th>
<th>Support Structure</th>
<th>Material Joints</th>
<th>Containment Entryway</th>
<th>Ventilation System Required</th>
<th>Negative Pressure Required</th>
<th>Exhaust Filtration Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand Tool Cleaning</td>
<td>3P</td>
<td>Rigid or Flexible</td>
<td>Air Impenetrable</td>
<td>Minimal</td>
<td>Partially Sealed</td>
<td>Overlapping</td>
<td>Not</td>
<td>Not</td>
<td>Not Required</td>
</tr>
<tr>
<td>(SP-2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Tool Cleaning w/ Vacuum</td>
<td>3P</td>
<td>Rigid or Flexible</td>
<td>Air Impenetrable</td>
<td>Minimal</td>
<td>Partially Sealed</td>
<td>Overlapping</td>
<td>Natural</td>
<td>Not</td>
<td>Not Required</td>
</tr>
<tr>
<td>(SP-3, SP-11, and SP-13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abrasive Blast Cleaning</td>
<td>1A</td>
<td>Rigid and Flexible</td>
<td>Air Impenetrable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Airlock or Resealable</td>
<td>Mechanical Required</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>(SP-10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vacuum Blast Cleaning</td>
<td>2A</td>
<td>Rigid and Flexible</td>
<td>Air Impenetrable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Resealable or Overlapping</td>
<td>Natural</td>
<td>Not Required</td>
<td>Not Required</td>
</tr>
<tr>
<td>(SP-10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet Methods</td>
<td>2W</td>
<td>Rigid or Flexible</td>
<td>Impermeable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Overlapping</td>
<td>Natural</td>
<td>Not</td>
<td>Not Required</td>
</tr>
<tr>
<td>(SP-13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 1 Footnotes

1. This table provides general design criteria only. It does not guarantee that specific controls over emissions will occur because unique site conditions must be considered in the design.

2. The SSPC Classification is based on SSPC Guide 6. Note that for work over water, water booms or boats with skimmers must be employed, where feasible, to contain spills or releases. Debris must be removed daily at a minimum.

3. Permeability addresses both air and water as appropriate. In the case of water or chemical removal methods, the containment materials must be resistant to both chemicals and water. Ground covers or base of containment floor should always be impermeable, and of sufficient strength to withstand the impact and weight of the debris and the equipment used for collection and clean-up.

4. Ventilation is not required provided the emissions are controlled as specified in this Section, and provided worker exposures are properly controlled. If unacceptable worker exposures to lead or other heavy metals occurs (per 29 CFR 1926.62), incorporate a ventilation system into the containment.

5. Ground covers or base of containment floor must always be impermeable and of sufficient strength to withstand the weight and impact of the debris and the equipment used for cleaning. If debris escape through the seams, then additional sealing of the seams and joints is required.

6. Containment materials must be of sufficient strength to withstand the impact and weight of the abrasive and the equipment used for cleaning. Ground covers must always be impermeable and also extend beyond the containment boundary to capture escaping debris.

7. Containment materials must be of sufficient strength to withstand the impact and weight of the abrasive and the equipment used for cleaning. Ground covers must also extend beyond the containment boundary to capture escaping debris. Vacuum-blast cleaning shall not be employed using ground covers and/or free hanging tarpaulins as a means of containment unless the Contractor has demonstrated that such containment is the equal of an SSPC Class 2A containment and has obtained the Engineer’s prior written approval therefor.

8. For all SP 1: Solvent Cleaning surface preparation, the Contractor shall utilize a containment class equivalent to the associated cleaning and/or painting operation being performed (e.g., power assisted hand tools, abrasive blast cleaning, painting, etc.)

9. Mechanical ventilation may be required if seal around vacuum is broken and the release of dust into the containment occurs.

10. Additional negative pressure may be required if seal around vacuum is broken and the release of dust into the containment occurs.

11. The containment materials must be impermeable with fully sealed joints, and of sufficient strength and integrity to facilitate the collection and holding of the water and debris for proper disposal. Ventilation is not required provided the emissions are controlled as specified in this Section, and provided worker exposures are properly controlled. If unacceptable worker exposure to lead and other heavy metal occurs (per 29 CFR 1926.62), incorporate a ventilation system into the containment.
3.3 SUBMITTALS

The Company shall furnish one additional set of all submittals required in Section 832 - Appendix A to the Resident Engineer who will in turn submit to NYCT Office of System Safety (OSS) for their review and where necessary approval.

The Company’s submittal schedule must consider that a **minimum of two months** is required for NYCT OSS to review and respond on all submittals, drawings and calculations.

In addition to the requirements of Appendix A – Submittals in Section 832, the Company must also comply with the submittal requirements of NYCT for lead paint removal work on/over SIRTOA ROW. These additional requirements are as follows:

3.3.1 Worker Protection Plan (NYCT – Lead Health and Safety Plan)

NYCT requires that the section of the Worker Protection Plan regarding Plans for Worker and Supervisor Lead Training also include the following:

Copies of SSPC-C3 Supervisor/Competent Person Training for Deleading of Industrial Structures and/or SSPC-C5 Supervisor/Competent Person Refresher Training for Deleading of Industrial Structures for the Project Manager, Foreman, and Competent Person assigned to the project. This training must have been taken within the past year and shall be retaken annually during the project. Proof of training for all other workers shall be submitted prior to the start of work and after each refresher training.

Note that the Worker Protection Plan required by NYCDOT is the same as the Lead Health Safety Plan required by NYCT.

3.3.2 Emergency Response Plan (ERP) and Contingency Plan

a) Prior to starting the Work, the Company shall submit to the Resident Engineer a project specific Emergency Response Plan (ERP) and Contingency Plan which detail the procedures that will be followed in the event of an accident, emergency situation, release or spill into the waterway, storm sewer, land in and around the Work Site, or at any off-site area used by the Company.

b) The following elements shall be included in the ERP and Contingency Plan:

1. Site Description and Evaluation
2. Pre-Emergency Planning
3. Personnel Roles, Lines of Engineer, Training and Certifications
4. Emergency Recognition and Prevention
5. Safe Distances and Places of Refuge
6. Evacuation Routes and Procedures
7. Spill and/or Release Cleanup Procedures for Minor and Catastrophic Releases
8. Decontamination of Victims
9. Emergency Medical Equipment and First Aid
10. Emergency Alerting and Response Procedures
11. Critiques of Response and Follow-Up
12. Personal Protective Equipment
13. Emergency Equipment
14. Coordination of Emergency Services with Local Hospitals, Fire Department and other emergency service agencies
After acceptance by NYCT and NYCDOT, the Company shall submit the ERP and Contingency Plan to State and Local Emergency Service Agencies. Proof of submission shall be submitted to the Resident Engineer prior to the start of abrasive blasting operations.

3.3.2 NYC Transit Placard

The Company will also be required to prepare and submit all elements required to obtain a NYCT Placard from the Office of System Safety (OSS). Many of the required elements are contained in other submittal documents however the Company will need to assemble them in one stand alone submittal package in accordance with the requirements outlined in the Lead Paint Removal and Disposal Package Manual included herein.

As a provision of receiving and maintaining a NYCT Placard, the Company must provide access to the site for OSS inspections.
LEAD PAINT REMOVAL AND DISPOSAL PACKAGE

MANUAL

Issued by Environmental Engineering Division, CPM, NYCT
Date of Issue:
# TABLE OF CONTENTS

**PURPOSE**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>1</th>
<th>CHAINS OF COMMAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEM</td>
<td>2</td>
<td>HAZARDOUS WASTE LIAISON</td>
</tr>
<tr>
<td>ITEM</td>
<td>3</td>
<td>CONTRACT AND SITE PROCEDURES</td>
</tr>
<tr>
<td>ITEM</td>
<td>4</td>
<td>WORKER PROTECTION PLAN</td>
</tr>
<tr>
<td>ITEM</td>
<td>5</td>
<td>EMERGENCY PROTECTION PLAN</td>
</tr>
<tr>
<td>ITEM</td>
<td>6</td>
<td>WASTE TRANSPORTER PERMITS</td>
</tr>
<tr>
<td>ITEM</td>
<td>7</td>
<td>HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES PERMITS</td>
</tr>
<tr>
<td>ITEM</td>
<td>8</td>
<td>LABORATORY CERTIFICATION</td>
</tr>
<tr>
<td>ITEM</td>
<td>9</td>
<td>SCHEDULE</td>
</tr>
<tr>
<td>ITEM</td>
<td>10</td>
<td>GENERAL ORDER INFORMATION</td>
</tr>
</tbody>
</table>
PURPOSE OF MANUAL

This manual is intended to provide a step-by-step guide for CPM Construction Managers, their staffs and their Contractors, on how to prepare a Lead Paint Removal and Disposal Package.
ITEM 1

CHAINS OF COMMAND

This item must include:
- chain of command for the **Construction Manager's** office (Construction Manager, Resident Engineer, Inspector);
- chain of command for **Environmental Engineering Division** (Principal Engineer/CM, Project Leader, Environmental Specialist);
- chain of command for **Contractor** and **ALL Subcontractors** involved with Lead Paint Removal / Disturbance activities (Project Manager, Site Supervisor, Safety Engineer / Health and Safety Officer).

The names on these lists must be accompanied by the office, beeper and/or cellular telephone numbers belonging to the mentioned persons.
ITEM 2

HAZARDOUS WASTE LIAISON

The Construction Manager's office should provide a formal memo with the name and telephone numbers (office and beeper / cellular) of Hazardous Waste Liaison (manifest signer).
ITEM 3

CONTRACT AND SITE PROCEDURES

Written (signed and dated), Contract and Site Specific Procedures and Methods for Removal and Disposal of all Lead Containing Materials must include the following information:

1. **Scope of work:** Description of the work that will be performed.
   **Location of job:** Site specific information of all areas where lead paint will be disturbed.

2. **Specific type of lead disturbance:** e.g. Surface preparation for repainting; Surface preparation for cutting; Welding or torch burning (a minimum 4 inches paint removal on either side of the cut line, front and back); Rivet busting; Steel repair; Concrete repair, etc.

3. **Specific Removal Methods** - i.e. Hand Tools (“Wet Scraping”); Power Tools with HEPA vacuum attachment; Approved Chemical Strippers (Peel Away 1, Back to Nature 3,4,7,8, etc.); etc., to be used at each location. If chemical strippers and / or any other chemical will be used as part of the Lead Paint Removal / Disturbance work, Material Safety Data Sheets (MSDS) and Product Data Sheets will be provided with the lead package. These products must be approved by NYCT prior to their use.

4. **Specific Containment** - SSPC Enclosure: Class 3P at Minimum for Hand Tools and HEPA attached power tools & 3C (chemical resistant) for Chemical Stripping (3P and 3C Polyester must be fire retardant). These consist of Horizontal and Vertical Tarps that in effect enclose the work area and prevent any fugitive lead from escaping.

5. **Security:** The area must be cordoned off with warning tape and cones to prevent unlawful entry. Signs must be posted just outside the work area. These signs will clearly state: Warning, Lead Work Area, Poison and No Smoking or Eating.

6. **Industrial Hygiene:** All employees involved in the project must be included in the Contractor’s OSHA Compliance plan (29 CFR 1926.62); see worker protection section (Item 4). A Hand Wash basin at minimum must be provided adjacent to each work area. If the PEL of 50 ug/m3 is exceeded, a shower facility may be provided.

---

*Exhibit I*
*Book 2: Volume 2*
7. **Cleanup:** All clean-up will be by HEPA vacuum. Wet sweeping is allowed only if HEPA vacuuming is proved to be ineffective and/or not feasible. Dry Sweeping is STRICTLY Prohibited. All HEPA filters will be checked daily. During surface preparation (lead paint removal) a HEPA Vac should be present to aid in clean-up of wayward chips.

8. **Storage** - A minimum of three (3) 55 gallon drums are required. One is for the paint chips and shall be labeled “Paint Chips/Debris”, “Contract #”, “Accumulation Date (the date when the first material was placed in the drum) and Hazardous Waste - Lead”. The other two (2) drums are for protective suits and containment material respectively. These materials must be HEPA vacuumed clean prior to being put in their respective drums. No Hazardous Waste will remain on-site over 90 days. Drums are to be stored in a secure area with a lockable door. The drums must be stored on pallets and positioned with the labels facing outwards so the labels can be read easily. The drum storage location must be specified clearly in the procedure.

9. **TCLP analysis:** TCLP (TOXIC CHARACTERISTIC LEACHING PROCEDURE) is not required for the "Paint Chips" drum(s) as this material is assumed to be hazardous. TCLP analysis is required for the drums that contain the vacuum cleaned tarps and suits. If TCLP analysis shows that these materials are not hazardous, then they can be disposed of as municipal waste.

10. **Disposal** - EPA ID# to be obtained by Environmental Engineering. Hazardous Waste will be transported by an approved Hazardous Waste Transporter to an approved Hazardous Waste Disposal Facility. Before disposal, Contractor will submit TCLP Lead results for Environmental Engineering approval. Hazardous Waste Manifest to be signed by NYCT’s trained Hazardous Waste Liaison. Non-Hazardous Lead Paint/Debris to be disposed of as Municipal Waste (Based on TCLP result).

11. A description of each phase of the Removal / Disposal procedure must be included. The description must contain the names, addresses and telephone numbers of the following: the Transporter, the Transfer Facility (if any) and the Treatment, Storage and Disposal (TSD) Facility. Also, the route that the truck(s) will take to the final destination should be included (all the states that truck(s) will go through).
ITEM 4

WORKER PROTECTION PLAN

OSHA has published Interim Lead Rule that require construction industry employers to take steps to prevent workers from being exposed to lead levels greater than 50 ug per cubic meter of air as an eight-hour time weighted average (TWA). Preliminary workers' protection is required when workers are exposed to lead levels above 30 ug per cubic meter as an eight-hour TWA such as medical monitoring. Once the exposure level exceeds 50 micrograms, employers must have to employ more extensive worker protection. Engineering controls and administrative controls must be employed where feasible prior to PPE.

Attached is a Worker Protection Plan into which the Contractor shall insert his company name in the blanks.
GUIDELINES FOR WORKER PROTECTION PLAN - LEAD REQUIREMENTS

(29 CFR 1926.62)

OSHA has published Interim Lead Rule that require construction industry employers to take steps to prevent workers from being exposed to lead levels greater than 50 micrograms per cubic meter of air as an eight-hour time weighted average (TWA).

Preliminary workers' protection is required when workers are exposed to lead levels above 30 micrograms per cubic meter as an eight-hour TWA, such as medical monitoring. Once the exposure level exceeds 50 micrograms, employers would have to employ more extensive worker protection methods, such as supplying respirators. Engineering controls and administrative controls must be employed where feasible prior to PPE. The old standard set the exposure limit at 200 micrograms per cubic meter of air as an eight-hour TWA.

The new standard sets the same exposure limit that OSHA uses to protect workers in general industry. Among those likely to be affected by the rule according to OSHA are:

- Highway and Street Construction Contractors
- Bridge, Tunnel and Elevated Highway Contractors
- Plumbing Contractors
- Electrical Work Contractors
- Plastering, Drywall and Insulation Work Contractors
- Carpentry Work Contractors
- Floor Layers and other Floor Work Contractors
- Structural Steel Erection Contractors
- Building Equipment Manufactures
- Miscellaneous Special Trade Contractors
Glass Products Manufacturers

Electrical Utilities

State and Municipal Governments

will provide to all workers training in the hazards of lead, the OSHA Lead Standard, the safety procedures and requirements of the Worker Protection Plan and all environmental regulations including those for the proper handling and management of Hazardous Waste. Copies of the OSHA Lead Standard and Worker Protection Plan will be made available to all workers.

will determine through OSHA personal air monitoring if any worker is exposed to lead levels above 30 micrograms per cubic meter of air as an eight-hour time weighted average (TWA). Exposure levels greater than this level will trigger other required compliance activities such as period exposure monitoring, biological monitoring and initial annual employee training.

As per OSHA, to the extent feasible will initiate engineering and work practice controls to reduce lead exposure to levels at or below the permitted exposure level 50 micrograms per cubic meter of air as an eight-hour time weighted average (TWA). The provision includes developing and implementing a compliance plan.

will provide workers with respiratory protection and make every effort to keep exposure levels below the permitted limit through engineering and work practice controls. requires proper maintenance of respiratory protection devices. Workers will be fit tested for respirators.

Protective clothing and equipment will be provided to all employees as necessary.

The rule provides requirements for housekeeping, including vacuuming surfaces to prevent accumulation of lead dust which will maintain.

will provide hygiene facilities and ensure that workers comply with hygiene practices to reduce lead absorption that accumulates on a worker's body or clothes.

A medical surveillance program will be provided to employees exposed above the action level (30 microgram per cubic meter) under the supervision of a licensed physician.

If a worker's periodic blood test (including a follow-up test) shows a blood lead level at or above 50 micrograms of lead per deciliter of blood, the employee will be removed from job. Employees with medical conditions that place them at an increase health risk from lead exposure also will be removed from the job. Employees are given up to 18 months of medical removal protection benefits; including maintaining total earnings, seniority and other employee rights.

Workers will be provided with information and training under OSHA's hazard communication standards.
___________ will post warning signs at all working areas:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

___________ will keep records on exposure monitoring and assessment, medical surveillance and temporary medical removals as per record keeping requirement and implement new control that redeveloped as required. During the life of the project all items installed for public safety shall be inspected and maintained in safe condition.

___________ will enforce all requirements for public protection with subcontractors where their work creates safety hazards for the public.
ITEM 5

EMERGENCY PROTECTION PLAN

The Emergency Protection Plan (per OSHA) will provide a list of names and telephone numbers of emergency contact personnel. It will be posted in the lunchroom and / or where the nearest phones are located.

The plan will also provide the procedures in emergency medical treatments, in case of fire or explosion, spills or leaks.

Attached is a sample of an Emergency Protection Plan.
EMERGENCY PROTECTION PLAN

CONTRACT #

Emergency Contacts / Notification System:

The following list provides names and telephone numbers of emergency contact personnel. It will be posted in the lunchroom and / or where the nearest phones are located. In the event of a medical emergency, personnel will take direction from the Health & Safety Officer (HSO) and notify the appropriate emergency organizations. In the event of a fire, medical emergency or spill, the HSO will notify NYCT RTO Command Center and the appropriate local, State and Federal agencies:

Ambulance: 911
Fire: 911 + the address & tel. # of the nearest firestation
Police: 911 + the address & tel. # of the nearest police precinct
Hospital: the address & tel. # of the nearest hospital
RTO Command Center: (24 hrs.) 718-243-4211
NYCT System Safety: (M-F 8 am - 5 pm) 718-243-8924
Poison Control Center:
Risk Management:
Chemtrech:
National Response Center:
Center for Disease Control:
DEP:
OSHA:
NYDOT:
Contractor's office tel.#:
Contractor's emergency tel.#:
Contractor's HSO: name & cell / beeper #
NYCT Hazardous Waste Liaison: name & cell / beeper #
Emergency Medical Treatment Procedures

Any person who becomes ill or is injured in the Exclusion Zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administrated prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e. removal of outer clothing, boots / boot covers, gloves, etc., redressing the victim in clean overalls or wrapping in blanket. First aid should be administrated while awaiting an ambulance or paramedics.

All injuries and illnesses must be immediately reported to the HSO and Office of System Safety. Any person being transported to a clinic or hospital for treatment should take with them information on the chemical they have been exposed to at the site.

Fire or Explosion

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival, the project manager or designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on site.

Only personnel specifically trained should use portable fire extinguisher. The fire extinguishers should only be used to extinguish fires determined by the trained personnel to be small enough to be put out by the size and the type of the fire extinguisher available.

Spills or Leaks

In the event of spill or leak, site personnel will:
- Inform their supervisor immediately.
- Locate the source of spillage and stop the flow if it can be done safely.
- Begin containment and recovery of spilled materials if it can be done safely.

If the a spill or release is expected to pose significant hazards or is beyond the capabilities of the immediate personnel, then the HSO will be contacted immediately. When contacted, the HSO will obtain and assess the following information:
- The material spilled or released.
- The location of the release or spill.
- An estimate of the quantity released and the rate at which it is being released.
- Any injuries involved.
- Fire / explosion or possibility of these events occurring.
- The area and materials involved in the location of the fire or explosion.
ITEM 6

WASTE TRANSPORTER PERMITS

The contractor must submit a list of all transporters which are intended to be used. The list must be accompanied of their valid permits for all the states the waste will pass through on its way to the TSD facility.

If a permit is expired and a new one has not been issued yet, the contractor can submit an extension letter from the state agency that regulates this type of permit. The letter must contain the name and telephone number of the person that could be contacted for a confirmation.
ITEM 7

HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES PERMITS

The Contractor must submit a valid permit for the TSD facility which is intended to be used for that job. The Permit's expiration date should extend over the date when the work is supposed to start. If the permit is expired, the Contractor can provide a letter of confirmation from the regulatory agency of the state where the facility is located (usually is a DEP). This letter should state that the named facility is allowed to operate under the old permit until the new one will be issued. The letter must contain the name and the telephone number of the person that can be contacted for a reconfirmation.
ITEM 8

LABORATORY CERTIFICATION

The contractor should submit a valid certification for the laboratory that will perform the testing. The certification must be issued by the New York State Dept. of Health's Environmental Laboratory Approval Program (ELAP) for Solid and Hazardous Waste - TCLP or TCLP - Metals.

TCLP = Toxicity Characteristic Leaching Procedure
ITEM 9

SCHEDULE

For this item, a page titled "Site Specific Information" will be provided and it needs to be filled out, dated and signed by the construction manager or his / her representative (see the sample provided).
SITE SPECIFIC INFORMATION

Date:

Contract No.:

Construction Manager: Signature:

Contractor:

1. Name(s) and Location(s) where lead paint removal is to occur:

2. Specific removal methods to be performed @ each location:

3. The approximate area (sq. ft.) of lead painted surfaces:

4. Lead Paint Removal Work Schedule (proposed dates & times + two (2) weeks contingency period):

5. The approximate number of days lead paint removal is anticipated @ each location:

6. The approximate number of workers per shift at each location:

LEAD PAINT REMOVAL WORK SCHEDULE MUST BE PROVIDED TO ENVIRONMENTAL ENGINEERING WITHIN THREE (3) WORKING DAYS (72 hrs) PRIOR TO COMMENCEMENT OF ANY WORK.

NO LEAD PAINT REMOVAL WORK SHALL TAKE PLACE WITHOUT THE CURRENT LEAD PAINT REMOVAL WORK SCHEDULE.

IF THERE ARE ANY CHANGES TO THE LEAD PAINT REMOVAL WORK SCHEDULE, CONTRACTOR MUST SUBMIT A REVISED WORK SCHEDULE PRIOR TO COMMENCEMENT OF ANY WORK WITHIN THREE (3) WORKING DAYS (72 HRS) TO C. M.'S OFFICE FOR FORWARDING TO ENVIRONMENTAL ENGINEERING.
ITEM 10

GENERAL ORDER INFORMATION

Under this item, a request form, a service plan and / or an actual general order must be provided.

If no G.O. is required, then Construction Manager's Office has to specify this in a formal memo which will be attached also in the package.
SECTION 4
NYCDOT SPECIFICATION 831 FOR PAINTING
SECTION 831

SPECIFICATION FOR PAINTING

DECEMBER 2006
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>PART 1.0 GENERAL</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOPE</td>
<td>1</td>
</tr>
<tr>
<td>GENERAL</td>
<td>1</td>
</tr>
<tr>
<td>SHOP AND FIELD PAINTING CONTRACTOR QUALIFICATIONS AND SUPERINTENDENCE</td>
<td>2</td>
</tr>
<tr>
<td>REGULATORY COMPLIANCE</td>
<td>3</td>
</tr>
<tr>
<td>REFERENCE STANDARDS</td>
<td>3</td>
</tr>
<tr>
<td>1. American Society for Testing and Materials (ASTM)</td>
<td>3</td>
</tr>
<tr>
<td>2. Code of Federal Regulations (CFR)</td>
<td>4</td>
</tr>
<tr>
<td>3. Society for Protective Coatings (SSPC)</td>
<td>6</td>
</tr>
<tr>
<td>4. New York State DOT Specifications</td>
<td>7</td>
</tr>
<tr>
<td>5. City of New York</td>
<td>7</td>
</tr>
<tr>
<td>6. Equipment and Coating Manufacturers' Published Instructions</td>
<td>7</td>
</tr>
</tbody>
</table>

| SUBMITTALS – See Appendix A.         | 8 |

<table>
<thead>
<tr>
<th>PART 2.0 PRODUCTS</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATERIALS</td>
<td>8</td>
</tr>
<tr>
<td>1. Abrasives</td>
<td>8</td>
</tr>
<tr>
<td>2. Coatings</td>
<td>8</td>
</tr>
<tr>
<td>3. Caulking</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIELD PAINTING CONTAINMENT MATERIALS AND SCAFFOLDING</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQUIPMENT</td>
<td>11</td>
</tr>
<tr>
<td>1. Surface Preparation and Painting Equipment</td>
<td>11</td>
</tr>
<tr>
<td>2. Personal Protective Equipment</td>
<td>11</td>
</tr>
<tr>
<td>3. Inspection Equipment</td>
<td>12</td>
</tr>
<tr>
<td>WASTE CONTAINERS</td>
<td>13</td>
</tr>
<tr>
<td>1. Hazardous Waste</td>
<td>13</td>
</tr>
<tr>
<td>2. Construction Waste</td>
<td>13</td>
</tr>
<tr>
<td>3. Spent Solvents</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART 3.0 EXECUTION</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFETY</td>
<td>14</td>
</tr>
<tr>
<td>CONTAINMENT, PROTECTION OF SURFACES, AND RESTITUTION</td>
<td>15</td>
</tr>
<tr>
<td>SCAFFOLDING</td>
<td>16</td>
</tr>
<tr>
<td>SENSITIVE NATURAL RESOURCES</td>
<td>16</td>
</tr>
<tr>
<td>ENDANGERED SPECIES</td>
<td>16</td>
</tr>
<tr>
<td>NOISE</td>
<td>17</td>
</tr>
<tr>
<td>TECHNICAL REPRESENTATION BY MATERIAL MANUFACTURER</td>
<td>17</td>
</tr>
<tr>
<td>LIMITED ACCESS AREAS – FOR CLEANING AND PAINTING</td>
<td>18</td>
</tr>
<tr>
<td>SURFACE PREPARATION</td>
<td>18</td>
</tr>
<tr>
<td>1. Pre-Production Field Surface Preparation Test Section</td>
<td>18</td>
</tr>
<tr>
<td>2. Removal of Existing Debris</td>
<td>19</td>
</tr>
<tr>
<td>3. Weld Spatter, Sharp Edges, and Holes</td>
<td>19</td>
</tr>
<tr>
<td>4. Removal of Rust Scale and Pack Rust</td>
<td>20</td>
</tr>
<tr>
<td>5. Steel Defects</td>
<td>20</td>
</tr>
<tr>
<td>6. Compressed Air Cleanliness</td>
<td>20</td>
</tr>
<tr>
<td>7. Surface Cleaning Requirements – New and Previously Painted Steel Substrates</td>
<td>21</td>
</tr>
</tbody>
</table>
Table of Contents - continued

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submittal Schedule and Engineer Acceptance</td>
<td>A-1</td>
</tr>
<tr>
<td>Project Schedule</td>
<td>A-1</td>
</tr>
<tr>
<td>Certifications</td>
<td>A-1</td>
</tr>
<tr>
<td>Contractor Chain of Command</td>
<td>A-1</td>
</tr>
<tr>
<td>Worker Safety Plan</td>
<td>A-2</td>
</tr>
<tr>
<td>Containment and Scaffolding</td>
<td>A-2</td>
</tr>
<tr>
<td>Field Surface Preparation/Painting Plan</td>
<td>A-3</td>
</tr>
<tr>
<td>Shop and Field Painting Quality Control Plan</td>
<td>A-4</td>
</tr>
<tr>
<td>Coating/Caulking Material Documentation for Shop and Field Painting</td>
<td>A-4</td>
</tr>
<tr>
<td>Sensitive Natural Resources and Endangered or Protected Species</td>
<td>A-6</td>
</tr>
<tr>
<td>Field Noise Permits and Noise Mitigation and Monitoring Plan</td>
<td>A-6</td>
</tr>
<tr>
<td>Construction Start Up Submittals</td>
<td>A-7</td>
</tr>
<tr>
<td>Field Surface Preparation Test Sections</td>
<td>A-7</td>
</tr>
<tr>
<td>Construction Phase Submittals and Documentation</td>
<td>A-7</td>
</tr>
<tr>
<td>Material Manufacturer’s Field Site Reports</td>
<td>A-7</td>
</tr>
<tr>
<td>Material Manufacturer’s Batch Certifications</td>
<td>A-7</td>
</tr>
<tr>
<td>Abrasive Cleanliness Test Reports</td>
<td>A-7</td>
</tr>
<tr>
<td>Inspection Log</td>
<td>A-7</td>
</tr>
<tr>
<td>Appendix B – NYSDOT Safety Bulletin SB-94-4, Histoplasmosis</td>
<td>B-1</td>
</tr>
<tr>
<td>Appendix C – Paint System Tables</td>
<td>C-1</td>
</tr>
</tbody>
</table>
PART 1.0 - GENERAL

1.01 SCOPE

A. The Special Provisions for the specific project, in conjunction with this Section, establish the project painting requirements. The Special Provisions identify the scope of work for the project, the items to be painted, extent of surface preparation required, the type of coatings to be applied, and unique project requirements. This Section provides the workmanship requirements for conducting the following surface preparation and painting activities:

1. Cleaning and painting of new, bare steel and galvanized steel.
2. Cleaning and painting of new, bare concrete, and previously painted concrete.
3. Field cleaning and finish painting of shop-primed steel.
4. Field partial removal of existing coatings and overcoating (steel, galvanized steel, and concrete substrates).
5. Field total removal of existing coatings followed by repainting (steel, galvanized steel, and concrete substrates).

B. In addition to the requirements of this Section, comply with the instructions provided on any Drawings included with the Contract Documents.

C. Provide all materials, apparatus, and labor necessary to perform the specified scope of work, whether or not the material or apparatus is specifically identified in this Section.

1.02 GENERAL

A. The Contractor is responsible for developing and implementing a project specific Quality Control Plan in accordance with the requirements of Appendix A that ensures the specified level of surface preparation and coating application as indicated on the drawings and in the contract documents.

B. Conduct all surface preparation and painting operations in a workmanlike manner in accordance with industry standards.
C. General painting contractor – attend a pre-job meeting with the Engineer, coatings manufacturer, REI consultant and any other appropriate parties.

D. Shop painting contractor – notify the Engineer, REI consultant, and the Department’s inspection agency of the painting schedule and the intended materials to be used at least 20 days prior to performing any painting work. Note that “shop” is defined as an enclosed facility where surface preparation and painting are performed. A lay down area at the project site that is used for cleaning and painting is not a “shop” for the purpose of this specification.

E. Coordinate all painting activities to assure that the prime, intermediate and finish coats of a given system are products of the same paint manufacturer. This includes both shop and field painted steel. Note that when this specification is used for the overcoating of existing paint systems, products produced by the manufacturer of the existing system need not be used unless warranty provisions dictate otherwise.

F. In the event of a conflict between the manufacturer’s technical data and the requirements of this Section, advise the Engineer of the discrepancies in writing, and comply with the Engineer’s written resolution.

G. When the Special Provisions specify that the existing coating being removed contains lead or other toxic metals, implement controls for the protection of workers, the public, and the environment, and for the handling and disposal of the waste. Comply with the requirements of NYCDOT Section 832, Specification for Lead Paint Removal – Worker/Environmental Protection and Waste Handling.

H. This Section applies to both shop and field painting. “Site, jobsite, project” and similar terms all apply to the shop painting location(s) and/or the field painting location(s).

1.03 SHOP AND FIELD PAINTING CONTRACTOR QUALIFICATIONS AND SUPERINTENDENCE

A. Unless otherwise specified in the Special Provisions, the painting Contractor or subcontractor that is directly performing the field cleaning and painting work shall possess SSPC-QP1 and QP2 certifications at the time of bid and throughout the duration of the project.

B. Unless otherwise specified in the Special Provisions, or exempted by the Department, the shop painting Contractor or subcontractor that is directly performing the cleaning and painting work shall possess SSPC QP-3 or AISC SPE certifications at the time of bid and throughout the duration of the project.

C. The Contractor is responsible for supervising and directing the painting work efficiently using the best skills and attention.
D. Keep an experienced, full time English-speaking superintendent acceptable to the NYCDOT on the project. The superintendent is the Contractor's representative and must have the authority to act on behalf of the Contractor. All communications given to the superintendent are binding upon the Contractor.

E. Keep trained and experienced quality control person(s) on the project to conduct all of the tests and inspections required to verify and document the quality of all aspects of the Work. Unless otherwise specified in the Special Provisions, the quality control person(s) shall have a minimum qualification of NACE CIP Level 1.

1.04 REGULATORY COMPLIANCE

A. Comply with the requirements of this Section and all applicable Federal, State, and City laws, codes, and regulations, including, but not limited to the regulations of the United States Environmental Protection Agency (USEPA) and Occupational Safety and Health Administration (OSHA), New York State Department of Environmental Conservation (DEC), New York State Department of Health (NYS DOH), New York State Department of Labor (NYS DOL), and the New York City Department of Environmental Protection (NYC DEP). Codes, Rules and Regulations of the State of New York (NYCRR) are administered by the NYS Department of Environmental Conservation, Albany, N.Y. EPA regulations are administered by the US Environmental Protection Agency, Region 2, N.Y., N.Y.

B. Identification of the above items in this specification that are of specific interest to the NYCDOT in no way relieves the Contractor of the responsibility to comply with all applicable legal requirements. Moreover, compliance with Contract specifications does not relieve the Contractor of the obligation to comply with other applicable requirements. If a Federal, State, or City regulation is more restrictive than any of the requirements of this Section, the more restrictive requirements shall apply.

1.05 REFERENCE STANDARDS

A. Latest Edition – The latest edition of the following standards and regulations in effect at the time of Contract letting form a part of this Section. In the event of a conflict, comply with the most restrictive requirements. Maintain at the job site, a copy of all applicable reference standards.

B. American Society for Testing and Materials (ASTM)

1. ASTM D1400, Standard Test Method for Non-Destructive Measurement of Dry Film Thickness of Non-Conductive Coatings Applied to a Non-
ferrous Metal Base

2. ASTM D3359, Standard Test Methods for Measuring Adhesion by Tape Test


5. ASTM D4258, Standard Practice for Surface Cleaning Concrete for Coating

6. ASTM D4259, Standard Practice for Abrading Concrete

7. ASTM D4263, Standard Method for Indicating Moisture in Concrete by the Plastic Sheet Method

8. ASTM D4285, Standard Test Method for Indicating Oil or Water in Compressed Air

9. ASTM D4414, Standard Practice for Measurement of Wet Film Thickness by Notch Gages

10. ASTM D4417, Standard Test Methods for field Measurement of Surface Profile of Blast Cleaned Steel


13. ASTM D6132, Test Method for Non-Destructive Measurement of Dry Film Thickness of Applied Organic Coatings Over Concrete Using an Ultrasonic Gage

14. ASTM D6386, Standard Practice for Preparation of Zinc (Hot-Dip galvanized) Coated Iron and Steel Products and hardware Surfaces for Painting.
C. **Code of Federal Regulations (CFR)**

1. 29 CFR 1910, Occupational Safety and Health Regulations for General Industry
2. 29 CFR 1910.20, Access to Employee Exposure and Medical Records
3. 29 CFR 1910.132, General Requirements for Personal Protective Equipment
4. 29 CFR 1910.133, Eye and Face Protection
5. 29 CFR 1910.134, Respiratory Protection
6. 29 CFR 1910.146, Permit-Required Confined Spaces
7. 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout)
8. 29 CFR 1926, Occupational Safety and Health Regulations for the Construction Industry
9. 29 CFR 1926.16, Rules of Construction
11. 29 CFR 1926.21, Safety Training and Education
12. 29 CFR 1926.24, Fire Protection and Prevention
13. 29 CFR 1926.28, Personal Protective Equipment
14. 29 CFR 1926.32, Definition of Competent Person
15. 29 CFR 1926.51, Sanitation
16. 29 CFR 1926.52, Noise Exposure
17. 29 CFR 1926.57, Ventilation
18. 29 CFR 1926.59, Hazard Communication
19. 29 CFR 1926.65, Emergency Response Plan
20. 29 CFR 1926.101, Hearing Protection
21. 29 CFR 1926.104, Safety Belts, Lifelines, and Lanyards
22. 29 CFR 1926.150, Fire Protection
23. 29 CFR 1926.151, Fire Prevention
24. 29 CFR 1926.152, Flammable and Combustible Liquids
25. 29 CFR 1926.154, Temporary Heating Devices
26. 29 CFR 1926.200, Accident Prevention Signs and Tags
27. 29 CFR 1926.400, Electrical Safety
28. 29 CFR 1926.450 - 454, Scaffolding
29. 29 CFR 1926.500 - 503, Fall Protection

D. **Society for Protective Coatings (SSPC)**

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

E. New York State DOT Specifications
   1. NYSDOT Safety Bulletin SB-94-4, Histoplasmosis
   2. NYSDOT Section 107-05, Safety and Health Plan

F. City of New York
   1. New York City Noise Control Code
   2. Noise Control Act of 1972

G. Equipment and Coating Manufacturers' Published Instructions

1.06 SUBMITTALS – See Appendix A.
PART 2.0 - PRODUCTS

2.01 MATERIALS

A. Abrasives

1. When abrasive blast cleaning is specified, provide abrasives that are dry and free of oil, grease, and corrosion producing, or other deleterious contaminants. Abrasives containing 1% or greater free silica are not permitted. MSDS or other written information from the abrasive supplier must be provided to demonstrate compliance with this requirement.

2. Provide abrasives that are sized to produce a sharp, angular, uniform anchor pattern profile height as required in the Paint System Table(s) for the specified systems. If the requirements of the coating manufacturer differ from the specified range, provide the recommendations in writing, and comply with the manufacturer’s recommendations only upon written approval of the Engineer. Measure profile during pre-production field surface preparation tests per 3.09 A., and adjust the abrasive size/mix accordingly.

3. Unless specified otherwise in the Special Provisions, use either expendable or recyclable abrasives. Only bring new abrasive materials to the project. Note that in the case of recyclable abrasives, use steel grit. The sharpness and angularity of the surface profile created by steel shot is not acceptable. Identify the abrasive that will be used in the submittals.

4. Provide the abrasives to the jobsite in original packaging or in bulk, and store in a clean, dry environment.

B. Coatings

1. Provide the type and quantity of coating materials, thinners, and cleaning solvents needed to paint all surfaces that are identified in the Special Provisions. A listing of coating systems is found in the attached Paint System Tables. The specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT.

2. Equivalency can be established through completion of AASHTO NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by NTPEP-tested systems listed in the applicable Paint System Tables. The testing shall have been performed by an AASHTO-approved laboratory, with the results posted to the Structural Steel Coatings DataMine on the AASHTO website. If the proposed system does not have NTPEP testing/field history, the proposed system
shall:

a) Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention,

b) Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1000 gallons minimum for each coat during the past year,

c) Have a minimum of two years successful field exposure on at least two bridge structures in a climate similar to New York City,

d) Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number and contact person of the bridge owner and Contractor who applied them, and

e) Be certified by the manufacturer in writing that the coating will perform comparably to the identified materials when applied in accordance with the requirements of this specification.

3. Use coatings that are compliant with Federal and State and City VOC regulations at the time of application. This includes the use of any required thinners.

4. Do not apply coatings until the coating manufacturer’s QA/QC programs have been submitted and reviewed by the Engineer.

5. Provide a written certification from the manufacturer with each batch of material supplied to the jobsite, stating that the batch represents the same material as on the approved list, together with the compositional test results identified in Appendix A (A.03). Supply quart retention samples with each batch of material for possible testing by the Engineer. In the case of multi-component products, supply a quart sample of each component.

6. Use the same manufacturer for all coats of a given system on a structure. Unless approved by the Engineer in writing, only use thinners that are supplied by the same manufacturer.

7. Provide each coat of paint (including stripe coats) in a contrasting color to distinguish it from the blast cleaned substrate and previously applied or existing coatings. Each coat must completely hide the underlying coat.

8. Stripe coat(s) must be of contrasting color to the underlying coating and the coating that is applied over the stripe coat. Wet-on-wet stripe coats are
9. The finish color(s) are identified in the Special Provisions. With the submittals, provide six (6) color samples of the finish coat(s) on 8 ½ inch x 11 inch paper board.

10. Order all paint, thinner, and cleaning materials well in advance of intended use. Maintain an adequate supply of all materials on site at all times so as to not delay the Work.

Provide all paint materials in sealed, original, containers that are properly marked and labeled to allow verification with applicable material safety data sheets, application precautions, and instructions. Verify that the labeling includes the manufacturer’s name, type of material, brand name, color designation, shelf life, contract or order number under which the material has been ordered, lot and batch numbers, and quantity. Immediately remove all damaged paint containers (e.g., dented, leaking containers) from the project site.

11. If the project material does not meet the product specification, at no cost to the NYCDOT, remove the coating from the jobsite and remove and replace any material from the same batch that has already been applied.

12. The Engineer reserves the right to audit the coating manufacturing facility according to the requirements of ANSI/ASQ C1-1996, Specification of General Requirements for a Quality Program. Issues identified by the audit that are not resolved to the satisfaction of the Engineer are cause for removing the coating manufacturer from the project.

C. **Caulking** - Provide and use material that is approved by the coating manufacturer and the Engineer. Caulking shall be tinted by the manufacturer so that the supplied material matches the finish coating color of the project.

### 2.02 FIELD PAINTING CONTAINMENT MATERIALS AND SCAFFOLDING

A. When removing paints that contain lead or other toxic metals, comply with the containment requirements of NYCDOT Section 832, Specification for Lead Paint Removal – Worker/Environmental Protection and Waste Handling.

B. Supply all materials needed to safely access the steel and to contain paint removal and paint application debris in accordance with the requirements of this Specification and Construction Details. This may include, but is not limited to, ground covers, rigging, scaffolding, planking, containment materials, water booms, boats with skimmers, and all other containment materials that may be needed.
C. Use a portable light meter with a scale of 9 to 50+ foot-candles to verify compliance with the lighting requirements of this specification.

D. Materials shall be fire retardant.

E. Do not use any materials until they have been accepted by the Engineer.

2.03 EQUIPMENT

A. Surface Preparation and Painting Equipment

1. Provide all brushes, discs, wheels, scrapers, descalers, blast cleaning, and other surface preparation equipment, including vacuum-shrouded tools as needed, to conduct the work as specified in this Section and the Special Provisions.

2. Provide equipment and materials that are clean and sized properly to accomplish the work, including the required surface profile and degree of cleanliness as required by this Section.

3. Note that each type of equipment must first be demonstrated on site to the satisfaction of the Engineer, and the Engineer must approve the use of the equipment before beginning work. The Engineer also has the authority to rescind the approval of any single piece of equipment if it is found to be not performing properly. Immediately remove rejected equipment from the job site.

4. Provide paint brushes, rollers, and spray equipment to conduct the work as specified in this Section and the Special Provisions.

5. Properly maintain all field equipment to comply with the New York City Noise Control Code for construction equipment.

B. Personal Protective Equipment

1. At each site, provide all personal protective clothing and equipment (PPE) needed for Contractor workers to assure that the workers are protected from hazards during all phases of the work. Provide all necessary PPE for NYCDOT employees and NYCDOT Agents (REI Consultants), including proper cleaning and disposal.

2. Repair or replace PPE as required to assure that it continues to provide its intended purpose.

C. Inspection Equipment
1. Maintain on site, all of the inspection and testing equipment needed by the Contractor for the quality control of the entire surface preparation and painting process.

2. Make the following available for use by NYCDOT Employees and Agents involved with the inspection of the surface preparation and coating work. The equipment is the property of the Contractor and will be returned upon completion of the project.

   a) SSPC Volume 1, “Good Painting Practice” and Volume 2, “Systems and Specifications” (1 copy)
   b) Sling psychrometer (2 per active site)
   c) Surface temperature thermometer, 0 to 250°F (2 per active site)
   d) US Weather Bureau Tables or psychrometric chart (2 per active site)
   e) SSPC Vis 1 for abrasive blast cleaning projects (2 copies per active site)
   f) SSPC Vis 3 for hand or power-tool cleaning projects (2 copies per active site)
   g) SSPC Vis 4 for water jetting projects (2 copies per active site)
   h) Keane-Tator Surface Profile Comparator with appropriate disc for abrasive blast cleaning projects (2 per active site)
   i) Testex Press-O-Film Replica Tape and spring micrometer for abrasive blast cleaning projects (2 rolls of the appropriate range and 1 micrometer per active site)
   j) Chloride test kits (Chlor-Test or Bresle)
   k) Wet film thickness gage, notch type of the appropriate range (2 per active site)
   l) Electronic dry film thickness gage with calibration standards (2 per active site)
   m) Tooke Gage (1 per active site)
n) Portable light meter with a scale of 9 to 50+ foot-candles (1 per active field site)

o) Unless stipulated otherwise in the Special Provisions, provide two-way radios with telephone capability at each active field site (one for each inspector and one each for NYCDOT designated senior personnel).

2.04 WASTE CONTAINERS

A. Hazardous Waste

1. Provide DOT-approved drums, tanks, roll-offs, or other containers of the appropriate size and type in accordance with 49 CFR 178 (e.g., 17H containers in the case of 55 gallon drums) that are suitable for any hazardous waste (liquid and solid) generated on the project. Use containers that are resistant to rust and corrosion (painted, if constructed of steel), that have tight fitting lids or covers, and which are water resistant and leak proof.

2. Assure that the dry volume capacity of the containers, in cubic yards, is clearly marked on all containers, and that they are labeled as required by applicable Federal, State and City regulatory requirements.

B. Construction Waste - Provide containers for non-hazardous construction waste. Use containers that are free of loose debris when brought on-site.

C. Spent Solvents - Provide appropriate containers for spent solvents. Containers shall be corrosion resistant and non-reactive to the solvents. Review solvent MSDS to ensure compatibility with container materials. Containers shall be labeled in accordance with all applicable federal, state, and City regulations.
PART 3.0 - EXECUTION

3.01 SAFETY

A. Conduct all Work in strict accordance with the relevant OSHA 29 CFR 1910 and 29 CFR 1926 regulations, and the safety and protection requirements stipulated by the equipment and material manufacturers. Develop, implement, and maintain a Safety and Health Plan as required under NYSDOT Section 107-05, including all associated Special Notes (e.g., Fall Protection Requirements).

B. Lockout/Tagout of Existing Electrical Systems

1. Develop, implement, and maintain a Lockout/Tagout plan.

2. De-energize and lockout/tagout existing electrical systems located inside containment enclosures and in other work areas as appropriate.


4. Coordinate all lockout/tagout activities with NYCDOT and the utilities.

C. Fire Protection and Prevention, and Emergency Response

1. Develop, implement, and maintain a site-specific Fire Protection and Prevention Plan meeting at a minimum the requirements of 1926.24 and 1926.150.

2. Control all sources of ignition throughout the period of construction and comply at a minimum with the requirements of 1926.151.

3. Store and handle all flammable and combustible in a safe manner and in compliance with the requirements of 1926.152 at a minimum.

4. Develop, implement and maintain a site-specific Emergency Response Plan in accordance with the requirements of 1926.65(q) at a minimum.

D. Electrical Safety

1. Develop, implement and maintain a written site-specific Electrical Safety plan ensuring control of electrical hazards due to installations, safety-related work practices, maintenance and environmental considerations, and/or use of special equipment as outlined in 1926.400 and 1926.403.

2. Implement all applicable provisions of 1926 Subpart K as necessary based upon the hazards present on the jobsite.
E. Smoking is strictly prohibited in or around any areas where flammable materials are stored or used.

F. Field painting contractors shall take special precautions when working in areas where pigeons have nested. Develop and implement a worker protection plan for the inspection and removal of pigeon droppings in accordance with NYSDOT Safety Bulletin SB-94-4 (copy attached as Appendix B). At a minimum, use gloves, whole body protective clothing and a dust respirator while inspecting or removing the debris, followed by through washing of hands, face, and forearms before eating, drinking, or smoking.

G. When removing or disturbing paints containing lead or other toxic metals, comply with the additional specialized measures identified in NYCDOT Section 832, Specification for Lead Paint Removal – Worker/Environmental Protection and Waste Handling.

3.02 CONTAINMENT, PROTECTION OF SURFACES, AND RESTITUTION

A. Contain the surface preparation and painting operations to avoid contamination of surrounding property. Use extreme diligence to assure that vehicles, equipment, hardware, fixtures, and other materials are protected against abrasive impact, paint spillage, overspray, falling objects, and other damage. Make full restitution for damages caused at no additional cost to the NYCDOT.

B. Requirements for containment when removing paints which contain lead or other toxic metals are found in NYCDOT Section 832, Specification for Lead Paint Removal – Worker/Environmental Protection and Waste Handling.

C. Use protective coverings, shields, or masking as necessary to protect surfaces that are not designated to receive surface preparation or coating, including, but not limited to, name plates, electrical equipment, bridge substructure, highway appurtenances, and slope protection.

D. Provide appropriate masking during shop and field painting to prevent the application of the intermediate and finish coats to faying surfaces and to surfaces that will be in contact with poured concrete. Remove all intermediate and finish coat applied to these areas at no cost to the NYCDOT.

E. Special containment restrictions may be invoked when pressure washing bridges that span a public water supply or span sensitive streams (e.g., trout streams). These restrictions are presented under 3.09 K. 2) b., “Pressure Washing.”

F. Maintain all protective coverings during the entire period the work is being performed. Remove protective coverings after the work is completed. Remove
the containment after it is cleaned to the satisfaction of the Engineer.

3.03 SCAFFOLDING

A. Erect all scaffolding and staging required for the work in strict accordance with all OSHA regulations.

B. Verify that suspended platforms and related components are designed and constructed to support at least 4 times its maximum intended load without failure, with wire cables capable of supporting at least 6 times their maximum intended load without failure.

C. If the bridge supports the containment or scaffolding system, provide containment drawings, calculations, and assumptions, including ventilation criteria as appropriate, signed and sealed by a Professional Engineer. Do not conduct any work until the drawings, calculations, scaffolding and containment submittals have been reviewed and accepted by the Engineer. Do not load the scaffolding until the installation is certified in writing by the Designer or by a designee working under the direction of the Designer.

D. Exercise extreme care in fastening, bracing, and handling the scaffolding and staging to avoid scratching or damaging bridge surfaces and surrounding property and equipment. Remove all scaffolding and staging materials upon project completion. Repair any damage created to the paint, structure, or surrounding property at no cost to the NYCDOT.

3.04 SENSITIVE NATURAL RESOURCES

A. Sensitive natural resource areas may be located around the project. A sensitive natural resource includes any area capable of providing habitat for plant and animal species or capable of functioning to support environmental systems and maintain the City’s environmental balance, such as bays, inlets, and wetlands. These areas also include all federal and state parkland, wetlands, tidal zones or other regulated natural areas.

B. If the project is located in a sensitive natural resource area, develop a site-specific habitat protection plan addressing the steps that will be taken to protect these ecologically sensitive areas from damage.

3.05 ENDANGERED AND PROTECTED SPECIES

A. Peregrine falcons (endangered), barn owls or red-tailed hawks (protected by Federal law) may be nesting on the bridge. Note that although these species may not be present on the bridge at the beginning of the project, they could show up at any time. If present, advise the Engineer and develop a site-specific plan for acceptance by the Engineer, for the sequencing of paint removal operations to
avoid disturbing nesting pairs.

B. Federal and State law permits peregrine falcon nests to be moved if the young have already fledged. Before moving any unoccupied nests, advise the Engineer and obtain a Federal USF&WS permit and a NYSDEC depredation permit.

C. Barn owl and red-tailed hawk nests are generally occupied from the beginning of April until the end of July, with eggs laid in April. Peregrine falcon nests are generally occupied from March to July.

3.06 NOISE

A. Field painting contractors shall comply with the New York City Noise Control Code for construction equipment.

B. If field construction activities will be performed outside of normal hours of operation (7AM to 6PM on weekdays), obtain special permits authorizing this activity. Provide a copy of the permit to the Engineer prior to commencing any operations outside of normal hours.

C. Provide a Noise Mitigation and Monitoring Plan for field work, identifying the steps that will be taken to monitor and mitigate noise on the project. Methods of mitigation include, but are not limited to sound suppression devices (mufflers) on compressed gas exhaust orifices and gasoline and diesel power sources, and enclosing noise generating equipment and operations within sound absorption barriers.

3.07 TECHNICAL REPRESENTATION BY MATERIAL MANUFACTURER

A. Arrange for a technical representative of the paint manufacturer(s) to inspect the shop and field Work to verify that the surface preparation and coating application are being performed as specified. Note that the purpose of the manufacturer(s) visits is to confirm that the work is satisfactory for the coating system, and not to recommend a reduction in the level of effort that has been specified.

B. Unless directed otherwise in the Special Provisions, arrange for manufacturer’s inspections at project start up, approximately half-way through the project, and upon completion of the Work. Provide the Engineer with a two (2) day advance notice prior to each manufacturer field visit.

C. Have the manufacturer(s) summarize the results of the inspection in writing, together with recommendations. Provide the report to the Engineer within 1 week after each visit.

3.08 LIMITED ACCESS AREAS – FOR CLEANING AND PAINTING
A. Limited Access is defined as a location where the physical characteristics or configuration of the structure restrict the use of a surface preparation or paint application tool at that location.

B. A location is not considered Limited Access if additional time will allow for the proper cleaning or painting of the area, or if commercially available tools are available to clean or paint the area (e.g., angle nozzles, or short nozzles in place of traditional long nozzles for blast cleaning).

C. If location(s) are believed to be Limited Access, submit a list of the locations to the Engineer. Include photographs, the measured size and a detailed description of each limited access area, together with an explanation as to why alternative tools can not be used. The determination of limited access areas and the degree of surface preparation and painting required in these areas is left to the sole discretion of the Engineer.

3.09 SURFACE PREPARATION

A. Pre-Production Field Surface Preparation Test Section

1. Prior to proceeding with field production surface preparation operations, prepare test sections for each of the types of equipment proposed for use, and for each of the specified degrees of cleaning (e.g., SP 10, SP 11, SP 3, etc.). Select each demonstration site with the approval of the Engineer to represent the unique bridge configurations to be cleaned and the type of material to be removed. Use each of the surface preparation methods and degrees of cleaning in each test area as appropriate. Unless the amount of available steel in the test area does not permit, prepare a minimum of 4 square feet for each method/degree of cleaning.

2. Prepare the surfaces in accordance with the requirements of the Special Provisions, this Section, and the approved Surface Preparation/Painting Plan provided under “Submittals.” Use the same equipment, materials, and procedures for the test section(s) that will be used for the production operations.

3. Provide safe access for close visual inspection and testing. SSPC-VIS 1, VIS 3, and VIS 4 photographic standards as applicable, may be used as an aid in defining the final surface appearance.

4. Do not use the equipment or proceed with production surface preparation activities until the Engineer agrees that the test section(s) conform with the cleanliness requirements of this Section. As directed by the Engineer, once the production work begins, remove and replace the equipment that is not performing properly.
5. Photograph the test areas and coat them with a clear urethane to preserve the level of cleaning for future reference. Use the approved test sections together with the written surface preparation specifications as the standard of cleaning for the project. In the case of conflict between the written definitions and the test sections, the written definitions prevail.

B. **Removal of Existing Debris** - Remove and properly dispose of accumulated cinders, dirt, and debris from all areas to be prepared and painted prior to undertaking surface cleaning or surface preparation operations. Note that the removal of pigeon droppings requires special considerations as outlined earlier in this Section.

C. **Weld Spatter, Sharp Edges, and Holes**

1. Remove slag, flux deposits, and weld spatter from all steel in the shop and newly installed steel in the field. Grind any resulting burrs smooth, including burrs around holes. For previously painted steel in the field, advise the Engineer if slag or weld spatter are present.

2. Prior to surface preparation in the shop, break the edges of all steel with the exception of rolled edges of angles, channels, and wide flange beams. Prior to surface preparation in the field, break the edges of new, previously unpainted steel, with the exception of rolled edges of angles, channels, and wide flange beams. Break the edges in the shop or field to an approximate 1/16” radius.

3. Remove the surface of flame hardened steel to the extent necessary to achieve the specified profile during subsequent blast cleaning or power tool cleaning.

4. If slivers are observed in the steel either before or after blast cleaning, remediate as follows:

   a) For previously painted steel, remove the slivers by grinding and re-profile the ground area prior to painting.

   b) For new steel in the shop or field, grind the area and advise the Engineer that slivers are present. The Engineer will either allow re-profiling to proceed, or will require weld repair of the area. When welding is required, grind the weld repair areas flush with the surface and re-profile.

   c) Unless prohibited by the Engineer, power tool cleaning in accordance with SSPC-SP11 can be used to re-profile the ground areas, rather than abrasive blast cleaning.
D. Removal of Rust Scale and Pack Rust

1. Regardless of the degree of surface preparation specified, remove rust scale and pack rust as follows:
   a) Remove all rust scale (loose and tight).
   b) Remove all loose pack rust.
   c) Unless specific criteria are provided in the Special Provisions, remove all tight pack rust until the highest point is a minimum of 1/8” below the surface of the surrounding sound steel.

2. Exercise extreme care to avoid nicking or gouging the steel during rust scale and pack rust removal. Nicks and gouges are cause for a suspension of activities until appropriate adjustments are made to prevent a reoccurrence.

E. Steel Defects

1. Immediately report to the Engineer any cracks or significant metal loss found in the structural steel.

2. Provide the Engineer with access to the suspect areas as needed to conduct an investigation.

F. Compressed Air Cleanliness

1. Provide compressed air that is free from moisture and oil contamination.

2. Conduct a white blotter test in accordance with ASTM D4285 to verify the cleanliness of the compressed air. Conduct the test at least once per shift for each compressor system. Sufficient freedom from oil and moisture is confirmed if soiling or discoloration are not visible on the paper.

3. If air contamination is evidenced, change filters, clean traps, add moisture separators or filters, or make other adjustments as necessary to achieve clean, dry air.

G. Surface Cleaning Requirements – New and Previously Painted Steel Substrates – The Special Provisions and attached Paint System Tables identify the degree of cleaning required for the coating systems used on the project. The methods below are applicable to the preparation of both new previously unpainted steel and for the spot removal or complete removal of coatings from previously painted steel. Apply the specified degree of cleaning to all designated surfaces. When the existing coating is being overcoated, conduct spot cleaning by the methods identified in this section and overall cleaning of the existing coating by
the methods identified in 3.09 K.

If it is believed that the specified degree of cleaning is not possible in an area, follow the requirements outlined in 3.08, Limited Access Areas. Requirements for the specified degree(s) of cleaning are provided below:

1. **SSPC-SP 1 Solvent Cleaning**
   a) Remove all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants from the surface in accordance with SSPC-SP 1.
   b) Only use solvents or detergents that are acceptable to the coating manufacturer and the Engineer. Provide product data and MSD sheets on proposed solvents or detergents for Engineer approval.

2. **SSPC-SP 2 Hand Tool Cleaning**
   a) Use scrappers, putty knives, wire brushes, chipping hammers and other similar tools to thoroughly clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 2 to remove all visible oil, grease, dirt, dust, loose mill scale, loose rust, loose paint, and other loose foreign matter.
   b) All locations of visible corrosion and rust bleed, exposed or lifting mill scale, and lifting or loose paint shall be prepared using the hand tools.
   c) Upon completion of the cleaning, rust, rust bleed, mill scale and surrounding paint are permitted to remain if they can not be lifted using a dull putty knife.
   d) SSPC-VIS 3 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual standards or test sections, the written definitions prevail.

3. **SSPC-SP 3 Power Tool Cleaning**
   a) Use power assisted hand tools such as sanding discs or 3M clean and strip discs, wire brushes, needle guns, or similar tools to thoroughly clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 3 to remove all visible oil, grease, dirt, dust, loose mill scale, loose rust, loose paint, and other loose foreign matter.
b) All locations of visible corrosion and rust bleed, exposed or lifting mill scale, and lifting or loose paint shall be prepared using the power tools.

c) Upon completion of the cleaning, rust, rust bleed, mill scale and surrounding paint are permitted to remain if they can not be lifted using a dull putty knife.

d) SSPC-VIS 3 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual standards or test sections, the written definitions prevail.

4. SSPC-SP 15 Commercial Grade Power Tool Cleaning

a) Use power assisted hand tools such as needle guns, Roto peening equipment, or similar tools to thoroughly clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 15 to remove all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide, corrosion products, and other foreign matter except for staining.

b) Allow random staining to remain on no more than 33 percent of each 58 sq cm (9 sq in.) of surface area. Allowable staining may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Surface discoloration is considered to be a residue that must be removed, rather than a stain, if it possesses enough mass or thickness that it can be removed as a powder or in chips when scraped with a pocketknife.

c) Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted.

d) Provide a minimum surface profile of 1 mil on all prepared surfaces. Comply with deeper profile requirements if specified by the Engineer or the coating manufacturer.

e) SSPC-VIS 3 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual standards or test sections, the written definitions prevail.

5. SSPC-SP 11 Power Tool Cleaning to Bare Metal
a) Use power assisted hand tools such as needle guns, Roto peening equipment, or similar tools to thoroughly clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 11 to remove all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide, corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted.

b) Provide a minimum surface profile of 1 mil on all prepared surfaces. Comply with deeper profile requirements if specified by the Engineer or the coating manufacturer.

c) SSPC-VIS 3 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual standards or test sections, the written definitions prevail.

6. SSPC-SP 6 Commercial Blast Cleaning

a) Thoroughly blast clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 6 to remove all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.

b) Allow staining to remain on no more than 33 percent of each nine square inch increment of surface area. Acceptable staining is limited to light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied paint. Surface discoloration is considered to be a residue that must be removed, rather than a stain, if it possesses enough mass or thickness that it can be removed as a powder or in chips when scraped with a pocketknife.

c) The Contractor should anticipate that the existing steel contains intact mill scale beneath the coating. Note that an SP 6 cleanliness requires the removal of all mill scale. When removing intact mill scale, the appearance after cleaning may approach SP 10, Near White, or SP 5, White Metal. NYCDOT is not responsible for additional compensation for the Near White or White Metal appearance that may result when removing the mill scale.

d) Unless restricted otherwise by the Engineer or the Special Provisions, accomplish the SP 6 degree of cleaning using any of the following: dry blast cleaning with recyclable or expendable abrasives, wet abrasive blast cleaning, water jetting with abrasive
injection, or vacuum blast cleaning. If it is proposed that wet methods of preparation be used, provide a letter from the coating manufacturer which approves the use of the specific method for their coating system. Include written recommendations from the coating manufacturer regarding the type of inhibitor, if any, that should be used to prevent flash rusting of the steel. Allow the surface to thoroughly dry prior to painting, and apply the primer before any visible rusting occurs.

e) SSPC-VIS 1 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual standards or test sections, the written definitions prevail.

7. SSPC-SP 7 Brush-off Blast Cleaning

a) Thoroughly blast clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 7 to remove all visible oil, grease, dirt, dust, loose paint, loose rust, loose mill scale, and other foreign matter. Verify that the surfaces have been exposed to the abrasive and that the surfaces are densely and uniformly roughened.

b) It is not intended that adherent mill scale, rust, and paint be removed by this process. Mill scale, rust, and paint are considered adherent after cleaning, if they cannot be removed by lifting with a dull putty knife. Verify that the edges of old, existing paint are feathered.

c) Unless restricted otherwise by the Engineer or the Special Provisions, accomplish the SP 7 degree of cleaning using any of the following: dry blast cleaning with recyclable or expendable abrasives, wet abrasive blast cleaning, water jetting with abrasive injection, or vacuum blast cleaning. If it is proposed that wet methods of preparation be used, provide a letter from the coating manufacturer which approves the use of the specific method for their coating system. Include written recommendations from the coating manufacturer regarding the type of inhibitor, if any, that should be used to prevent flash rusting of the steel. Allow the surface to thoroughly dry prior to painting, and apply the primer before any visible rusting occurs.

d) SSPC-VIS 1 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual
standards or test sections, the written definitions prevail.

8. **SSPC-SP 10 Near-White Blast Cleaning**
   a) Thoroughly blast clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 10 to remove all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.
   b) Allow staining to remain on no more than 5 percent of each nine square inch increment of surface area. Acceptable staining is limited to light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied paint. Surface discoloration is considered to be a residue that must be removed, rather than a stain, if it possesses enough mass or thickness that it can be removed as a powder or in chips when scraped with a pocketknife.
   c) Unless restricted otherwise by the Engineer or the Special Provisions, accomplish the SP 10 degree of cleaning using any of the following: dry blast cleaning with recyclable or expendable abrasives, wet abrasive blast cleaning, water jetting with abrasive injection, or vacuum blast cleaning. If it is proposed that wet methods of preparation be used, provide a letter from the coating manufacturer which approves the use of the specific method for their coating system. Include written recommendations from the coating manufacturer regarding the type of inhibitor, if any, that should be used to prevent flash rusting of the steel. Allow the surface to thoroughly dry prior to painting, and apply the primer before any visible rusting occurs.
   d) SSPC-VIS 1 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual standards or test sections, the written definitions prevail.

9. **SSPC-SP 5 White Metal Blast Cleaning**
   a) Thoroughly blast clean all surfaces specified in the Special Provisions. Comply with the requirements of SSPC-SP 1 and SP 5 to remove all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter.
   b) Unless restricted otherwise by the Engineer or the Special Provisions, accomplish the SP 5 degree of cleaning using any of
the following: dry blast cleaning with recyclable or expendable abrasives, wet abrasive blast cleaning, water jetting with abrasive injection, or vacuum blast cleaning. If it is proposed that wet methods of preparation be used, provide a letter from the coating manufacturer which approves the use of the specific method for their coating system. Include written recommendations from the coating manufacturer regarding the type of inhibitor, if any, that should be used to prevent flash rusting of the steel. Allow the surface to thoroughly dry prior to painting, and apply the primer before any visible rusting occurs.

c) SSPC-VIS 1 and the approved surface preparation test section may be used as an aid in determining the quality of cleaning. In the case of conflict between the written definitions and the visual standards or test sections, the written definitions prevail.

H. Water Washing/Scrubbing of Cables – The Special Provisions and attached Paint System Tables identify the degree of cleaning required for the coating systems used on the project. The methods below are applicable to the preparation of cables. Apply the specified degree of cleaning to all designated surfaces. If it is believed that the specified degree of cleaning is not possible in an area, follow the requirements outlined in 3.08, Limited Access.

1. Use low pressure water (<150psi) and stiff bristled non-metallic scrub brushes to hand clean the exterior of the cables. Provide product data and MSD sheets for Engineer review and approval for any proposed additives that will be used to remove grease, dirt, mildew or other surface matter.

2. Provide a surface, which when viewed without magnification, is free of all visible dirt, chlorides, oil, grease, mildew, chalk, bird droppings, or other foreign matter. Wipe a cloth of contrasting color across the surface at random. Unless otherwise directed by the Engineer, clean the surface until an ASTM D4214 chalk rating of 8 or better is obtained.

3. Comply with the water collection criteria described in 3.09 K.2. under Pressure Washing.

I. Surface Cleaning Requirements – Bare and Painted Galvanized Surfaces Other than Cables – The Special Provisions and attached Paint System Tables identify the degree of cleaning required for the coating systems used on the project. The methods below are applicable to the preparation of both new previously unpainted galvanize and for the spot removal or complete removal of coatings from previously painted galvanize. Apply the specified degree of cleaning to all designated surfaces. If it is believed that the specified degree of cleaning is not possible in an area, follow the requirements outlined in 3.08,
Limited Access Areas.

1. **Preparation for Overcoating** - When the existing coating is being overcoated, conduct spot cleaning by the methods identified in this section and overall cleaning of the existing coating by the methods identified in 3.09 K.

2. **Preparation for Complete Cleaning or Complete Coating Removal** - If bare galvanizing is being prepared, or if existing coating on galvanized steel is to be completely removed, use waterjetting/pressure washing, abrasive blast cleaning, or power tool cleaning. Requirements for the specified degree(s) of cleaning are provided below:

   a) Remove lubricant or residuals from bare galvanized surfaces by solvent cleaning in accordance with SSPC-SP 1.

   b) For waterjetting or pressure washing:

      (1) Clean bare uncoated galvanized steel to a WJ-1 cleanliness in accordance with SSPC-SP12 to remove corrosion and foreign matter.

      (2) If the galvanized steel is coated, and coating removal is specified, remove all coatings, corrosion, and foreign matter. Supplement the waterjetting or pressure washing with scraping and power tool cleaning as necessary to remove all material and corrosion.

      (3) When using waterjetting or pressure washing, also comply with the requirements of 3.09 K.2.b) (3) for the collection of the water.

      (4) After waterjetting or pressure washing, roughen the surface of the galvanizing as required to assure adhesion of the newly applied coating. Roughening can be accomplished by injecting abrasive into the water stream, follow up abrasive blast cleaning, or power tool cleaning.

      (5) As an alternative to mechanical roughening, if approved by the Engineer and the coating manufacturer, a chemical pretreatment can be used.

   c) For abrasive blast cleaning:
(1) Prepare bare uncoated galvanized steel by sweep blasting to remove corrosion and other foreign matter.

(2) If the galvanized steel is coated, and coating removal is required, remove all coatings, corrosion, and foreign matter by blast cleaning.

(3) In the case of both bare and previously painted galvanized steel, provide a uniform and dense anchor pattern across the entire surface, and exercise extreme care to minimize the amount of galvanizing that is removed.

d) For power tool cleaning:

(1) Prepare bare uncoated galvanized steel with power tools to remove corrosion and other foreign matter. If the galvanize is coated, and coating removal is required, remove all coatings, corrosion, and foreign matter by power tool cleaning.

(2) In the case of both bare and previously painted galvanized steel, roughen the entire exposed surface with power tools, but exercise extreme care to minimize the amount of galvanizing that is removed.

(3) As an alternative to mechanical roughening, if approved by the Engineer and the coating manufacturer, a chemical pretreatment can be used.

e) Chromate Treatment – for new galvanizing, prior to painting confirm that a chromate treatment is not on the surface. Test methods for detection are included in the Paint System Tables. If chromates are present, remove it by mechanical cleaning.

J. **Surface Cleaning Requirements – New and Previously Painted Concrete Substrates** – The Special Provisions and attached Paint System Tables identify the degree of cleaning required for the coating systems used on the project. The methods below are applicable to the preparation of both new previously unpainted concrete and for the spot removal or complete removal of coatings from previously painted concrete. Apply the specified degree of cleaning to all designated surfaces.

When the existing coating is being overcoated, conduct spot cleaning by the methods identified in this section and overall cleaning of the existing coating by the methods identified in 3.09 K.
If it is believed that the specified degree of cleaning is not possible in an area, follow the requirements outlined in 3.08, Limited Access. Requirements for the specified degree(s) of cleaning are provided below:

1. Remove grease, oil, and similar interference material from bare concrete surfaces by water cleaning, detergent water cleaning, or steam cleaning in accordance with ASTM D4258.

2. Remove laitance, efflorescence, loose concrete, concrete fins, and other surface irregularities. When coatings are present, remove the coatings to the extent specified (loose coatings only or total removal of all coatings). Conduct the cleaning by mechanical abrading (power tool cleaning), water blast cleaning, or abrasive blast cleaning in accordance with ASTM D4259.

3. Remove loose material by broom cleaning, low pressure compressed air blow down, and/or vacuuming in accordance with ASTM D4258.

4. Upon completion of cleaning, verify that the surface is dry and free of loose dust and debris prior to painting.

K. Cleaning and Pressure Washing Existing Coatings for Overcoating – Regardless of substrate type, if the existing coatings will be overcoated, comply with the following. Apply the specified degree of cleaning to all designated surfaces.

If it is believed that the specified degree of cleaning is not possible in an area, follow the requirements outlined in 3.08, Limited Access. Requirements for the specified degree(s) of cleaning are provided below:

1. Spot Cleaning – spot clean loose, deteriorated coatings, corrosion, mill scale, galvanize, and concrete by the methods identified for the respective substrate type in 3.09 G (steel), 3.09 I (galvanize), or 3.09 J (concrete).

2. Overall Cleaning
   a) SSPC-SP 1 Solvent Cleaning
      (1) Remove all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants from the surface in accordance with SSPC-SP 1.
(2) Only use solvents or detergents that are acceptable to the coating manufacturer and the Engineer. Provide product data and MSD sheets on proposed solvents or detergents for Engineer approval.

b) Pressure Washing

(1) Use Low Pressure Water Cleaning (LP WC) as defined in SSPC-SP 12 to thoroughly clean all designated surfaces. This involves the use of pressures less than 5,000 psi. Use steam cleaning in lieu of water washing only upon approval of the Engineer. Provide product data and MSD sheets for Engineer review and approval for any proposed additives that will be used to remove grease, dirt, mildew or other surface matter.

(2) Supplement the water or steam cleaning by wiping or scrubbing as needed to provide a surface, which when viewed without magnification, is free of all visible dirt, chlorides, oil, grease, mildew, chalk, bird droppings, or other foreign matter. Wipe a cloth of contrasting color across the surface at random. Unless otherwise directed by the Engineer, clean the surface until an ASTM D4214 chalk rating of 8 or better is obtained.

(3) Wash Water Collection

(a) Collection Required – collect the water if specified in the Special Provisions, or if the structure being cleaned spans a public water supply or is in the watershed area of the New York City water supply. Use a minimum class 3W containment per SSPC Guide 6 to divert, collect, and/or dispose of the water on the adjoining land mass, at a location away from the waters edge. Do not allow the spent water to enter the water supply.

(b) Sensitive Streams - Spent water free of paint chips and debris is allowed to enter sensitive streams at certain times of the year. Sensitive streams are susceptible to thermal shock and pollutants and structures in these areas can only be pressure washed when adequate flow in the stream exists to dilute possible contaminants. Verify the DEC categorization of the stream. For streams categorized as “CT(s),” conduct all washing prior to
July 1, otherwise collect all water. For bridges located at DEC yearling trout stocking sites, do not conduct any washing during April.

(c) Collection not required – Collection of the water is not required in all other instances, but use mesh tarpaulins with openings no greater than 25 mils in diameter in accordance with containment class 4W of SSPC Guide 6 to collect paint chips and debris. Remove the collected material once a day, or more frequently if directed by the Engineer, and store for proper disposal.

3. Surface Roughening
   
a) If the existing coating is glossy, or if otherwise specified in the Paint System Tables or Special Provisions, roughen the surface by abrasive blast cleaning or hand/power tool cleaning.

L. Fasteners

1. Thoroughly solvent clean black iron and galvanized fasteners in accordance with SSPC-SP1 to remove torqueing oils and thoroughly power wire brush in accordance with SSPC-SP3.

2. If required by the Special Provisions for black iron fasteners, in lieu of power tool cleaning, solvent clean the fasteners in accordance with SSPC-SP1 and abrasive blast to with SSPC-SP10, Near White.

M. Feathering

1. Regardless of the method(s) of preparation utilized, in all areas where existing coating is allowed to remain, feather the transition between the existing coating and adjacent bare substrate. Feather for a distance of 1 to 2 inches to provide a smooth, tapered transition into the existing intact coating.

2. Verify that the edges of the existing coating are tight and intact by probing with a putty knife in accordance with the requirements of SSPC-SP 3. Roughen the existing coating in the feathered area to assure proper adhesion of the newly applied coats.

N. Abrasive Cleanliness
1. When abrasive blast cleaning is specified, verify the cleanliness of the abrasive as follows:

   a) For disposable abrasives, select a new, unused sample and conduct the water soluble contaminant and oil content tests outlined in SSPC-AB 1 at least one time each week. If the results do not comply with the SSPC criteria, stop using the abrasive and immediately notify the Engineer.

   b) For recyclable abrasives, select a sample from each recycling machine in use and conduct the water-soluble contaminant, and oil content tests outlined in SSPC-AB2 at least one time each week. Conduct the non-abrasive residue and lead content tests as directed by the Engineer. If the results do not comply with the SSPC criteria, notify the Engineer immediately, and remove and replace the abrasive and clean the recycling equipment. Conduct additional tests each day to confirm that the equipment is functioning properly. Return to the weekly testing intervals as directed by the Engineer.

2. Record the results of all abrasive tests in a log book or report form that is maintained at the jobsite. Make the results available for review by the Engineer at any time.

O. Surface Profile

1. When abrasive blast cleaning to SP 6, SP 10, or SP 5 is specified, provide the surface profile specified in the Paint System Table(s) unless the requirements of the coating manufacturer differ and are approved by the Engineer in writing. Measure the surface profile using the Keane-Tator Surface Profile Comparator or Testex Replica Tape in accordance with ASTM D4417.

2. When SSPC-SP 11 or SP15 is specified, provide a minimum surface profile of 1.0 mil, or a profile of a greater minimum depth if required by the coating manufacturer or the Engineer. Comply with any maximum profile limitations established by the coating manufacturer. Measure the surface profile using the Testex Replica Tape in accordance with ASTM D4417.

P. Chloride Remediation

1. Verify that chloride is remediated to a level of no greater than 7µg/cm². Use cell methods of SSPC- Guide 15 to collect the samples and analyze by Kitigawa tube or Quantab strip. Perform chloride tests in areas of pitted steel, both on the substructure and in the splash zone adjacent to the
roadway. When existing coatings are being overcoated, conduct additional tests on the remaining coating.

2. Conduct a minimum of 5 tests per containment on bare steel and 2 tests on existing coatings in the case of overcoating, or as otherwise directed by the Engineer. Conduct the tests upon completion of surface preparation and prior to paint application. If unacceptable levels of soluble salt remain, reclean the affected areas until acceptable results are achieved.

3. Methods of chloride removal may include, but are not limited to, steam cleaning or pressure washing and scrubbing before or after initial paint removal, abrasive blast cleaning the steel and allowing it to rust overnight followed by reblasting, blast cleaning with blends of fine and course abrasives, or wet abrasive blast cleaning. Describe the proposed method(s) of chloride remediation in the submitted Surface Preparation/Painting Plan.

3.010 PAINT STORAGE, MIXING, AND HANDLING

A. Paint Storage

1. Store all paint, thinners, and solvents in accordance with OSHA and Fire Department regulations for flammable materials, and in accordance with the requirements of the paint manufacturer. Obtain Engineer approval for all storage locations.

2. Equip the storage facility with temperature control devices to maintain the storage temperature between 40°F and 90°F. If the requirements of the manufacturer are more restrictive, comply with the more restrictive requirements.

3. Provide the size and number of fire extinguishers in proper proportion to the quantity of paint stored.

4. Use explosion-proof lighting fixtures in the storage area.

5. Do not permit smoking in paint storage, mixing, and application areas.

6. Keep all containers of paint unopened until required for use.

7. Replace all damaged or leaking containers of paint at no cost to the NYCDOT.

8. Do not open or mix paints in the storage area.

9. Do not return mixed paints to the storage area.
10. Use Underwriter's Laboratories approved containers for transporting paint to mixing areas.

11. Do not permit the accumulation of empty paint cans, combustibles, and other debris.

12. Maintain MSD Sheets for all materials.

**B. Mixing and Thinning of Coating Materials**

1. Verify that the paint to be mixed has not exceeded its shelf life. Remove from the project site, all paint with an expired shelf life.

2. When required by the manufacturer, warm paints to specified temperatures above 50°F prior to mixing.

3. Utilize proper ventilation in the mixing area to prevent injury to workmen or the accumulation of volatile gases.

4. Mix all coatings in accordance with the requirements of the coating manufacturer. Use mechanical equipment such as a Jiffy mixer when allowed by the manufacturer.

5. Mix only complete kits of multi-component materials. Mixing of partial kits is not allowed.

6. Do not use materials beyond the pot life established by the manufacturer's written instructions.

7. Do not thin any paints unless approved in writing by the paint manufacturer and the Engineer. If thinning is required and authorized, use only those types, brands, and amounts of clean thinner stipulated by the coating manufacturer. Use an approved measuring device to measure the amount of thinner added and thin only in the presence of the Engineer.

8. Strain materials after mixing to remove agglomerations.

3.011 **COATING APPLICATION**

**A. Painting Plans** – Apply all field coatings in accordance with the requirements of this Section, the coating manufacturer’s instructions, and the approved Surface Preparation/Painting Plan provided under “Submittals.” Apply all shop coatings in accordance with the requirements of this Section and the coating manufacturer’s instructions.
B. **Limited Access Areas** – Submit proposed methods of coating application together with the coating manufacturer’s recommendations, for achieving complete coverage in limited access areas (e.g., modified brushes, paint mitts, daubers, etc. as appropriate for the coating system). See 3.08, Limited Access Areas.

C. **Quality of Surface Preparation Prior to Painting**

1. Verify that the surface exhibits the specified degree of chloride remediation, washing, hand tool cleaning, power tool cleaning, or abrasive blast cleaning, including surface profile requirements, immediately prior to painting.

2. Apply the first coat before rusting or degradation of the surface occurs, but in no case allow the prepared surface to stand more than 12 hours prior to painting. Reclean rusted or degraded surfaces, or those surfaces that have stood over 12 hours prior to painting.

D. **Surface Cleanliness Prior to Painting and Between Coats**

1. When overcoating existing paint or overcoating shop-primer, verify that the coatings have been thoroughly cleaned prior to painting, and that pockets are dry and free of mud, dirt, and other accumulations. In the case of shop coats, verify that the manufacturer’s maximum recoat times have not been exceeded.

2. Thoroughly clean the surface of each coat prior to the application of the next to remove spent abrasive, dirt, dust, cement spatter, and other interference material. Comply with the requirements of NYCDOT Section 832, Specification for Lead Paint Removal – Worker/Environmental Protection and Waste Handling for the special restrictions on using compressed air for cleaning when removing paints which contain lead or other toxic metals.

3. If grease or oil have become deposited on the bare substrate or on the surface of any of the applied coats, remove by solvent cleaning in accordance with SSPC-SP1 prior to the application of the next coat.

E. **Moisture Content Prior to Coating Application**

1. Prior to the application of the each coat, verify that the surface is visually dry.

2. For concrete substrates, in addition to the visual assessments, determine if moisture is present within the substrate itself. Use the plastic sheet method in accordance with ASTM D4263. After removal of the plastic
sheet, if moisture is evident on the substrate or on the backside of the plastic, allow additional drying before applying the coating. Retest to confirm that the additional drying is adequate.

3. As an alternative, propose a specific brand and model of moisture meter for consideration by the Engineer. Include a letter from the coating manufacturer indicating the percentage of moisture that is acceptable for the meter being proposed. If approved by the Engineer, the moisture meter can be used in lieu of the plastic sheet method.

F. Ambient Conditions During Coating Application – Apply coatings under the following conditions. Do not apply coatings under conditions outside of the ranges specified below without written approval of the coating manufacturer, and specific written authorization from the Engineer.

1. Surface and Air Temperatures – See attached Paint System Tables.
2. Relative Humidity – See attached Paint System Tables.
3. Dew Point – See attached Paint System Tables.
4. Frost/Rain - Do not apply coatings to surfaces containing frost or free standing water, or during rain, fog, or similar detrimental weather conditions.
5. Remove and replace any paint that was applied under unacceptable conditions, or exposed to unacceptable conditions (e.g. rain or dew) prior to adequate curing.

G. Methods of Application – Spray apply all coatings in the shop. For field work, unless specified otherwise in the Special Provisions or restricted by the coating manufacturer, apply the coatings by the methods shown below, but note that for spraying, prior approval from the Engineer is required. In order to obtain approval, provide the Engineer with the methods of containment that will be employed and the special precautions that will be taken to control overspray.

1. Brush application – Use round or oval brushes. Use flat brushes only on surfaces such as large plates between connections, and only upon approval of the Engineer. Brush apply the paint using a series of small circles to thoroughly fill in all surface irregularities, and end with a series of parallel strokes to smooth the finish.

2. Roller application – Only use rollers on large surfaces such as plates between connections, and only upon approval of the Engineer. Select a nap size and roller quality that will properly wet the substrate and produce a smooth, uniform film. Apply the coating in a such a manner as to
achieve complete and thorough coverage of the surface and all irregularities. Back-roll the surface after application to create a smooth, uniform finish.

3. Daubers – On surfaces which are inaccessible for paint brushes, use sheepskins or daubers especially constructed for the purpose.

4. Airless or conventional spray application – If conventional spray is approved for use, verify that the compressed air supply is clean and dry as determined by the blotter test in accordance with ASTM D4285. When spraying, use extreme care to avoid contamination of surrounding areas, and strictly follow the containment methods and practices that were approved by the Engineer.

H. **Material Agitation** – Unless prohibited by the manufacturer or when using moisture curing urethanes, keep all paint materials under agitation during application. When using brush, roller, or dauber application, periodically stir the material during use to keep it agitated.

I. **Recoat Times**

1. Apply each coat only after the previous coat has been allowed to dry as required by the manufacturer's written instructions, but as soon as possible to minimize the length of time that the coating is exposed to dust and other contamination. Do not allow any coat to remain exposed for longer than the recoat times provided in the attached Paint System Tables.

2. In the case of shop primer that is overcoated in the field, verify that the recoat window has not been exceeded before overcoating.

3. Unless approved otherwise by the Engineer in writing, remove and replace all coats if the applied coat exceeds the maximum recoat time prior to overcoating, if the shop-applied coat exceeds the manufacturer’s maximum recoat times, or a coat is exposed over the winter months prior to the application of the next.

J. **Coverage, Continuity, and Stripe Coating**

1. Apply each coat in a workmanlike manner to assure thorough wetting of the substrate or underlying coat, and to achieve a smooth, streamline surface relatively free of dryspray, overspray, and orange peel. Shadow-through, pinholes, bubbles, skips, misses, lap marks between applications, or other visible discontinuities in any coat are unacceptable. Runs or sags may be brushed out while the material remains wet.
2. When applying penetrating sealer (Paint Systems B’, C’, and D’), apply the sealer in such a manner that it thoroughly wets the underlying coat or substrate, and wicks into crevices and under the edges of old paint (when used for overcoating). When flowing the sealer into these areas, remove excess material while it remains wet. Do not exceed the maximum dry film thickness for the product as defined in the Paint System tables.

3. Remove dryspray and overspray by sanding or screening prior to the application of the next coat. When present on the finish, remove as directed by the Engineer and apply another coat of finish to the area. Remove all other defective coating to sound material and reapply the appropriate number and type of coatings to repair the coating system.

4. Thoroughly coat all surfaces with special attention to hard-to-reach areas, and irregular surfaces such as lacing bars and rivets. When coating configurations such as bolts, apply the material from multiple directions to assure complete coverage.

5. Unless stipulated otherwise in the Special Provisions, apply a stripe coat of contrasting color as specified in 3.011. J. 8. below. Thoroughly apply the stripe coat to all edges, welds, crevices, rivets, bolt threads, bolt heads, areas of pitted steel and other surface irregularities. Extend the stripe coat approximately 1” from all surface irregularities. Note: when a stripe coat of penetrating sealer is specified, the requirement for contrasting color is waived.

6. Apply the stripe coat by brush or spray. When spraying, supplemental brush application is mandatory to ensure complete and thorough coverage. When brushing organic zinc primers, repeatedly stir the material with the brush during use to prevent settling of the zinc.

7. With the exception of the inorganic zinc primer of System A, wet on wet application of the stripe and full coat is not allowed. For the primer of system A, apply the full coat while the stripe coat is still tacky. For all other coats, when applying the stripe coat prior to the full coat, do not apply the full coat until the stripe coat has dried according to the recoat times in the Paint System Tables. When applying the stripe coat after the full coat, do not apply the stripe coat until the full coat has cured sufficiently to withstand foot traffic. Do not apply the next coat until the stripe coat has cured for the recoat times shown in the Paint System Tables.

8. Apply the following number of coats per system. “Stripe” indicates that a stripe coat as defined above is required. “Full” indicates that a full coat is required. “Spot” indicates that a spot coat is required. For a given coat,
the stripe coat can be applied before or after the full coat.

<table>
<thead>
<tr>
<th>System</th>
<th>Primer</th>
<th>Sealer</th>
<th>Intermediate</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Stripe and Full*</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>A'</td>
<td>Full</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>B</td>
<td>Stripe and Full</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>B'</td>
<td>Stripe and Full</td>
<td>Stripe</td>
<td>Full</td>
<td>Full</td>
</tr>
<tr>
<td>B''</td>
<td>Spot</td>
<td>Full</td>
<td>NA</td>
<td>Full</td>
</tr>
<tr>
<td>C</td>
<td>Stripe and Full</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>C'</td>
<td>Stripe and Full</td>
<td>Stripe</td>
<td>Full</td>
<td>Full</td>
</tr>
<tr>
<td>D</td>
<td>Stripe and Full</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>D'</td>
<td>Stripe and Full</td>
<td>Stripe</td>
<td>Full</td>
<td>Full</td>
</tr>
<tr>
<td>E</td>
<td>Spot</td>
<td>NA</td>
<td>Full</td>
<td>Full</td>
</tr>
<tr>
<td>F</td>
<td>Full</td>
<td>NA</td>
<td>NA</td>
<td>Full</td>
</tr>
<tr>
<td>G</td>
<td>Stripe and Full</td>
<td>NA</td>
<td>Full</td>
<td>Full</td>
</tr>
<tr>
<td>I</td>
<td>Apply System B'</td>
<td>Full</td>
<td>NA</td>
<td>Full</td>
</tr>
<tr>
<td>J</td>
<td>Stripe and Full</td>
<td>NA</td>
<td>Full</td>
<td>Full</td>
</tr>
<tr>
<td>K</td>
<td>Stripe and Full</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>K'</td>
<td>Stripe and Full</td>
<td>Stripe</td>
<td>Full</td>
<td>Full</td>
</tr>
<tr>
<td>L</td>
<td>Spot</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>L'</td>
<td>Spot</td>
<td>Full</td>
<td>NA</td>
<td>Full</td>
</tr>
<tr>
<td>M</td>
<td>Spot</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>M'</td>
<td>Spot</td>
<td>Full</td>
<td>NA</td>
<td>Full</td>
</tr>
<tr>
<td>N</td>
<td>Spot</td>
<td>NA</td>
<td>Stripe and Full</td>
<td>Full</td>
</tr>
<tr>
<td>N'</td>
<td>Spot</td>
<td>Full</td>
<td>NA</td>
<td>Full</td>
</tr>
<tr>
<td>O</td>
<td>Full</td>
<td>NA</td>
<td>NA</td>
<td>Full</td>
</tr>
</tbody>
</table>

*Apply the stripe coat first, then apply the full coat in a wet-on-wet application. This is the only coat where wet-on-wet application of the stripe coat is required or permitted.

K. **Wet Film Thickness** - Use wet film thickness gages in accordance with ASTM D4414 to monitor the thickness of each coat at the time of application. Note that wet film readings will be the primary method of determining the thickness of coatings applied to concrete substrates.

L. **Dry Film Thickness and Corrective Action for Thickness Deviations**

1. Unless directed otherwise by the Engineer, apply each coat to the thicknesses specified in the attached Paint System Tables.

2. Measure and record the thickness of each coat on carbon steel substrates using nondestructive magnetic dry film thickness gages. Comply with SSPC-PA2 for the calibration and use of the gages, and the frequency of
thickness measurements. Spot readings both 20% above and 20% below the specified thicknesses are permitted, provided the average thicknesses are within the specified tolerances.

3. Measure the thickness of each coat applied to non-ferrous metal substrates using nondestructive thickness gages in accordance with ASTM D1400.

4. As directed by the Engineer, measure the thickness of coatings applied to concrete substrates in accordance with ASTM D6132.

5. If there are questions regarding the non-destructive measurements of coating thickness, a Tooke Gage (destructive scratch gage) may be used when authorized by the NYCDOT. Conduct measurements in accordance with ASTM D4138, but limit the use of the gage to a minimum of locations. Mark and repair all damage caused by the destructive testing, whether created by the Engineer or the Contractor. Repair the damage from testing at no cost to the NYCDOT.

6. Apply additional coating of the same type to areas of insufficient thickness. Use care during application to assure that all repairs blend in with the surrounding material.

7. Unless directed otherwise by the Engineer in writing, remove excessive coating thickness and reapply the affected coat(s).

M. Coating Adhesion

1. Apply all coats in such a manner to assure that they are well-adherent to each other and to the substrate. If the application of any coat causes lifting of an underlying coat, or there is poor adhesion between coats or to the substrate, remove the coating in the affected area to adjacent sound, adherent, coating, and reapply the material.

2. If adhesion is suspect, conduct adhesion tests in accordance with ASTM D3359 or ASTM D4541 as directed by the Engineer, and repair all test areas. The acceptance criteria for the testing will be established by the Engineer and the coating manufacturer. Replace all defective coating that is revealed by the testing.

N. Caulking

1. When specified in the Special Provisions, use caulking to seal crevices, gaps between steel elements exceeding 1/8”, and areas of pack rust that can not be removed.
2. Identify the caulking materials to be used in the pre-project submittals. Use only caulking materials that are acceptable to the paint manufacturer and the Engineer.

3. Unless directed otherwise by the Engineer, apply caulking before the application of the finish coat. Use a caulking that matches the color of the finish coat.

4. Mix and install the caulking in strict accordance with the approved Field Surface Preparation/Painting Plan and the caulking manufacturer's instructions.

O. Fasteners

1. Unless directed otherwise in the Special Provisions, field coat black iron and galvanized fasteners as follows:
   a) If the fasteners are prepared by solvent cleaning and abrasive blast cleaning, apply all coats of the specified field system.
   b) If the fasteners are prepared by solvent cleaning and power tool cleaning:
      (1) For systems A and A’; B, B’, and B”; C and C’; D and D’; and K and K’, apply two coats of intermediate and one coat of finish.
      (2) For systems E, F, G, I, and J, apply all coats.

3.012 REPAIR OF DAMAGE, TOUCH UP, AND UNACCEPTABLE COATINGS

A. Surface Preparation of Localized Areas

1. The Engineer will define the areas of damage, touch up, corrosion, or unacceptable coatings that are considered to be localized for the purposes of repair. Repair these areas at no additional cost to the NYCDOT.

2. Prepare the surface by solvent cleaning in accordance with SSPC-SP 1 prior to mechanical cleaning.

3. In areas previously blast cleaned, if the damage exposes the substrate, remove all loose material and prepare the steel in accordance with SSPC-SP 11. Follow with solvent cleaning in accordance with SSPC-SP 1 to remove surface contamination.
4. In areas originally prepared by power tool cleaning, or if the substrate is not exposed in those areas previously blast cleaned, remove all loose material and prepare the surface in accordance with SSPC-SP 3. Use SSPC-SP 2 hand tool cleaning for surface preparation only upon written approval of the Engineer. Follow with solvent cleaning in accordance with SSPC-SP 1 to remove surface contamination.

B. Surface Preparation of Extensive Areas of Damage or Unacceptable Coating

1. The Engineer will define the areas of damage, corrosion, or unacceptable coatings that are considered to be extensive for the purposes of repair. Repair these areas at no additional cost to the NYCDOT.

2. Remove all coatings in accordance with the originally specified degree of surface preparation.

3. When abrasive blast cleaning is employed, use extreme care to avoid damage to the surrounding coating due to overblast.

C. Feathering of Edges in Repair Areas

1. Feather the existing coating surrounding each repair location. Feather for a distance of 1 to 2 inches to provide a smooth, tapered transition into the existing intact coating.

2. Verify that the edges of coating around the periphery of the repair areas is tight and intact by probing with a putty knife in accordance with the requirements of SSPC-SP 3. Roughen the existing coating in the feathered area to assure proper adhesion of the repair coats.

D. Coating Application in Repair Areas

1. When the bare substrate is exposed in the repair area, apply all coats of the system to the specified thicknesses.

2. When the bare substrate is not exposed in the repair area, apply only the affected coats.

3. Maintain the thickness of the system in overlap areas within the specified total thickness tolerances.

3.013 HOUSEKEEPING AND WASTE DISPOSAL

A. Conduct housekeeping daily to maintain the work site in a neat and orderly condition.
B. Unless directed otherwise by the Engineer, at the end of each day at a minimum, haul empty paint cans and other debris to the waste storage area.

C. Remove all paint drips, splashes, and overspray from surfaces not intended to be painted.

D. Upon project completion, remove all equipment and materials, correct any damage caused by the operation, and leave all surfaces in a clean and acceptable condition. Correct any damage created and conduct all necessary project clean up at no additional cost to NYCDOT.

E. Handle, store, transport, and dispose of all hazardous and non-hazardous project waste in strict accordance with the Federal and state regulations.

3.014 INSPECTION

A. The NYCDOT reserves the right to inspect all phases of the Work to verify that it is in accordance with the requirements of this Section.

B. Facilitate shop and field inspections as required, including allowing ample time for the inspections. For field inspections, provide suitable lighting (50 foot candles minimum at the surface), access to the work, and all necessary safety and fall protection equipment.

C. Inspections will include the following minimum hold points to determine specification compliance. Do not proceed with subsequent phases of the Work until the preceding phase has been approved by the Engineer:

1. prior to the start of surface preparation work,
2. immediately following surface preparation,
3. immediately prior to the application of the first coat,
4. prior the application of each additional coat (including stripe coats), and
5. after the final coat is applied and dried.

D. The presence or activity of NYCDOT inspections in no way relieves the Contractor of the responsibility to provide comprehensive quality control inspections of its own to confirm that all work complies with the requirements of this Section, and in the case of field work, complies with the approved Field
Surface Preparation/Painting Plan. Report the results of daily Contractor quality control inspections in a log book or report that is maintained at the jobsite or in the painting shop. Recording of quality control inspections must not lag more than one day behind the progression of the Work. Make the log book or report available to the Engineer for review upon request.

E. Furnish, until final acceptance of the coating system, all equipment and instrumentation needed to inspect all phases of the work. The equipment is identified in Part 2.0, Products.

3.015 ONE YEAR ANNIVERSARY INSPECTION

A. A one year anniversary inspection will be conducted approximately twelve months after completion of the field painting project. Participate in this inspection with the Engineer. Arrange for a representative of the coating manufacturer to be present for this inspection.

B. For projects where total coating removal and replacement were performed, repair, at no cost to the NYCDOT, all locations where the coating exhibits disbonding, cracking, rusting, or other such defects.

C. For projects where coating repair and overcoating were performed:

1. Repair, at no cost to the NYCDOT, all locations where the coating exhibits disbonding, cracking, rusting, or other such defects in those areas where the new system was applied to bare substrate.

2. Repair, at no cost to the NYCDOT, all areas where the new coats are not adhering to each other at any location across the structure.

3. The contractor is not responsible for the lifting of the old coating material provided the work was performed in compliance with this Section. Where the work is not in compliance with the requirements of this Section (e.g., excessive dry film thickness), repair the lifting old coating.

D. Perform all repairs in accordance with the requirements of this Section, the coating manufacturer's written instructions, and written repair procedures approved by the Engineer.
4.0 - MEASUREMENT

4.01 Lump Sum for each item. Include in the price bid, the costs for all labor, tools, equipment, paints, materials, scaffolding, supplies, plans, programs, services of the manufacturer’s representative, traffic controls, or incidentals to properly perform and complete the Work specified in this Item.

4.02 Caulking – Per lineal foot. Include in the price bid, the costs for all labor, tools, equipment, materials and incidentals needed to properly perform the Work specified in this Item.

5.0 – PAYMENT

5.01 Partial payments will be made. The contract lump sum price will be prorated to establish the amount of each partial payment based on the percentage of the structure that has been painted. Within each area, payments will be made as follows: 50% after satisfactory preparation, priming (and striping if applicable), 25% after satisfactory application of intermediate (including striping if applicable), 15% after satisfactory application of finish, and 10% after completion of final touch up.

<table>
<thead>
<tr>
<th>Item No</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>831.01.NNNN</td>
<td>System A - all coats applied in shop (SP10/Inorganic Zinc/Epoxy Intermediate/ Urethane Finish)</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>831.03.NNNN</td>
<td>System A’ - shop prime - field intermediate/finish (SP10/Inorganic Zinc/Epoxy Intermediate/ Urethane Finish)</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>831.05.NNNN</td>
<td>System B - total coating replacement SP10/Epoxy Zinc/Epoxy Intermediate/ Urethane Finish)</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>831.07.NNNN</td>
<td>System B’- total coating replacement - sealer used (SP10/Epoxy Zinc/Epoxy Penetrating Sealer/Epoxy Intermediate/Urethane Finish)</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>831.08.NNNN</td>
<td>System B’'- overcoating – sealer used (SP 15/Spot Epoxy Zinc /Epoxy Penetrating Sealer/ Urethane Finish)</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>831.09.NNNN</td>
<td>System C- total coating replacement (SP10/MCU Zinc/MCU Intermediate/MCU Finish)</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>
831.11.NNNN System C’ - total coating replacement - sealer used  Lump Sum
(\text{SP10/MCU Zinc/Sealer/MCU Intermediate/MCU Finish})

831.13.NNNN System D – total coating replacement  Lump Sum
(\text{SP6/MCU Aluminum/MCU Intermediate/MCU Finish})

831.15.NNNN System D - overcoating  Lump Sum
(\text{Spot Clean/Wash/MCU Alum/MCU Intermediate/MCU Finish})

831.17.NNNN System D’ - total coating replacement – sealer used  Lump Sum
(\text{SP6/MCU Aluminum/Sealer/MCU Intermediate/MCU Finish})

831.19.NNNN System D’ - overcoating - sealer used  Lump Sum
(\text{Spot Clean/Wash/Sealer/MCU Alum/MCU Intermediate/MCU Finish})

831.21.NNNN System E - overcoating  Lump Sum
(\text{Spot Clean/Wash/Alkyd Primer/Alkyd Intermediate Silicone Alkyd Finish})

831.23.NNNN System F - overcoating  Lump Sum
(\text{Spot Clean/Wash/Alkyd Primer/Aluminum Alkyd Finish})

831.24.NNNN System G – total coating replacement  Lump Sum
(\text{SP-6/Aluminum Epoxy Mastic Primer/Epoxy Intermediate/Urethane Finish})

831.26.NNNN System I – repainting I bars (spot application over I bars repainted with System B’)
(\text{SP-10/ Localized Crystalline Calcium Sulfonate Penetrating Sealer/Finish})  Lump Sum

831.27.NNNN System J – total coating replacement  Lump Sum
(\text{Full Removal/Spot SP-3/Aluminum Epoxy Mastic Primer/Epoxy Intermediate/Urethane Finish})

831.29.NNNN System K - total coating replacement  Lump Sum
SP10/Epoxy Zinc/Epoxy Intermediate/Polysiloxane Finish)
831.31.NNNN  System K′- total coating replacement - sealer used
(SP10/Epoxy Zinc/Epoxy Penetrating Sealer/Epoxy Intermediate/Polysiloxane Finish)  Lump Sum

831.33.NNNN  System L – total coating of bare galvanize
(Clean/Spot MCU Zinc/Full MCU Intermediate/Full MCU Finish)  Lump Sum

831.35.NNNN  System L′ – overcoating painted galvanize – sealer used
(Clean/Spot MCU Zinc/Full MCU Penetrating Sealer/Full MCU Finish)  Lump Sum

831.37.NNNN  System M – total coating of bare galvanize
(Clean/Spot Epoxy Zinc/Full Epoxy Intermediate/Full Urethane Finish)  Lump Sum

831.39.NNNN  System M′ – overcoating painted galvanize– sealer used
(Clean/Spot Epoxy Zinc/Full Epoxy Penetrating Sealer/Full Urethane Finish)  Lump Sum

831.41.NNNN  System N – total coating of bare galvanize
(Clean/Spot Epoxy Zinc/Full Epoxy Intermediate/Full Polysiloxane Finish)  Lump Sum

831.43.NNNN  System N′ – overcoating painted galvanize- sealer used
(Clean/Spot Epoxy Zinc/Full Epoxy Penetrating Sealer/Full Polysiloxane Finish)  Lump Sum

831.45.NNNN  System O – bare concrete, total replacement, overcoating  Lump Sum
(Clean/Full Acrylic/Full Acrylic)

831.50.NNNN  Spot Cleaning/Painting of Black Iron or Galvanized Fasteners (SP1/SP3 or SP10/coating materials applied to surrounding steel)  Lump Sum

831.60.NNNN  Caulking  Lineal Foot
APPENDIX A – SUBMITTALS

A.01 GENERAL

A. This Appendix identifies the plans, programs, and documentation required for shop and field painting: pre-construction, at the start of construction, and during the construction phase.

A.02 PRE-CONSTRUCTION SUBMITTALS

A. Submittal Schedule and Engineer Acceptance

1. Submit the following plans and programs to the Engineer for review and acceptance a minimum of 45 days prior to the commencement of shop work or 45 days prior to mobilization for field work. The shop or field Contractor shall not begin any paint removal Work until the Engineer has accepted the submittals.

2. Do not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the Work, or for addressing health and safety concerns. Acceptance of the programs does not relieve the Contractor from the responsibility to conduct the Work in strict accordance with the requirements of Federal, State, or City regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

B. Project Schedule – Provide the Engineer with an initial estimate of the workdays required to complete each phase of the project (e.g., shop cleaning, painting, and shipping; field mobilization, paint removal, paint application, and demobilization).

C. Certifications – Unless the requirement for certification is eliminated by the Special Provisions, provide evidence of the following:

1. Shop – current SSPC-QP3 or AISC SPE certifications
2. Field – current SSPC-QP1 and QP2 certifications

D. Contractor Chain of Command

1. Submit a listing of key shop and field Contractor personnel, including names and relative positions, addresses, and telephone and pager numbers.
2. Include the names and telephone/pager numbers for contact persons who are available on a 24-hour basis in the event of emergencies.

E. **Worker Safety Plan** – The shop and field contractors shall develop and implement a worker safety plan for the protection of all shop and field workers.

1. The plan must comply with NYSDOT Section 107-05 and all associated Special Notes.

2. Address the protection of workers from all project hazards including but not limited to fall protection, confined space (if applicable), hearing and eye protection, and exposure to hazardous materials or conditions.

3. For field work, include provisions for the inspection and removal of pigeon droppings in accordance with NYSDOT Safety Bulletin SB-94-4.

4. **Lockout/Tagout Plan** – Provide the procedures in accordance with 29 CFR 1910.147 and 1910.333 that will be followed for lockout/tagout of existing electrical utilities within containment or other work areas as appropriate. Include provisions for coordinating lock-out/tag-out activities with NYCDOT and the Utilities.

5. **Fire Protection and Prevention, and Emergency Response** – Provide procedures in accordance with the requirements of 29 CFR 1926.24 and 1926.150 for the control, storage and handling of flammable and combustible materials, including a site-specific Emergency Response Plan in accordance with the requirements of 1926.65(q) at a minimum.

6. **Electrical Safety** – Provide procedures in accordance with 29 CFR 1926.400, 1926.403, and all applicable provisions of 29 CFR 1926, Subpart K.

7. Include as part of the plan, or in a separate submittal, a binder containing MSDS for all materials that will be used on the Project site. If all MSDS are not available at the pre-construction stage, provide the MSDS before using the product on site.

8. A separate worker protection plan addressing exposures to lead and other toxic metals is addressed under Section 832.

F. **Containment and Scaffolding** – If the bridge supports the containment or scaffolding system, provide containment drawings, calculations, and assumptions, including ventilation criteria as appropriate, signed and sealed by a Professional Engineer, as outlined in Section 832.
G. **Field Surface Preparation/Painting Plan**

1. Provide written procedures for conducting the Work of this Section including, but not limited to the following as applicable: the preparation of surfaces; abrasive cleanliness tests; the remediation of chloride and ferrous salts; coating mixing, application, and repair; recoat times and cleaning between coats; and the installation of caulking and sealant materials. Provide specific details for the preparation and painting of limited access areas, and for striping edges, corners, crevices, rivets, bolts, welds and sharp edges. If shop-applied primer is finish coated as a part of the Work, include the procedures that will be followed for the cleaning of the primer prior to field painting.

2. Provide a comprehensive listing of the equipment that will be used for surface preparation and painting. Include a description of equipment repair and replacement capability, including the procedures that will be followed in the event of equipment failure so that lost production time is kept to a minimum.

3. Identify the methods of protection or work isolation procedures that will be followed to protect surrounding structures, equipment, and property from exposure to surface preparation and paint debris.

4. If it is proposed that the coatings be applied by spray, provide the containment methods proposed for use together with any additional precautions that will be taken to control overspray. Spray application can not be used unless approved by the Engineer.

5. Provide the name and chemical composition, product data sheets, and MSD sheets of detergents or solutions that will be used for cleaning the existing coating or for the removal of mildew. Only use detergents which are environmentally safe and which will have no adverse effect on aquatic life are acceptable.

6. If abrasive blast cleaning is specified, identify the type and brand name of the abrasive proposed for use, and provide MSD sheets or other documentation from the supplier which identifies the hazardous materials that are present and confirms that the abrasive contains less than 1% free silica.

7. If the coating manufacturer recommends a different surface profile for their product than the limits stipulated in the Paint System Tables, provide a letter from the manufacturer stating the recommended surface profile range. Comply with the manufacturer’s recommended profile only upon written approval of the Engineer.
8. If wet abrasive blast cleaning is proposed, include a letter from the coating manufacturer which approves the use of the method for their coating and recommends inhibitor(s), if any, that can be used to prevent flash rusting, together with a statement that the inhibitor(s) will not reduce coating performance. Submit application procedures and MSD sheets for the inhibitor that will be used. Use an inhibitor only upon approval of the Engineer.

H. Shop and Field Painting Quality Control Plan

1. Provide written procedures for conducting and recording the shop and field quality control inspections of work quality identified in this Section including, but not limited to the following as applicable: the preparation of surfaces; abrasive cleanliness tests; the remediation of chloride and ferrous salts; coating mixing, application, and repair; recoat times and cleaning between coats; and the installation of caulking and sealant materials. If shop-applied primer is finish coated as a part of the Work, include the procedures that will be followed for the inspection of the cleaning of the primer prior to field painting.

2. Provide a comprehensive listing of the inspection equipment that will be used for surface preparation and painting, and the means that will be used to verify that it is properly calibrated during use.

3. If it is proposed that a moisture meter will be used to confirm adequate dryness of concrete prior to application, provide the specific brand and model of moisture meter for consideration by the Engineer. Include a letter from the coating manufacturer indicating the percentage of moisture that is acceptable for the meter being proposed. The moisture meter can be used in lieu of the plastic sheet method only if accepted by the Engineer.

4. Provide samples of the forms that will be completed to document the results of the inspections.

5. Provide proof of the training and experience of the QA/QC personnel who will be conducting the quality control inspections.

I. Coating/Caulking Material Documentation for Shop and Field Painting

1. Identify the coating materials to be applied, including all thinners proposed for use. Include the manufacturer’s name, product names, and product numbers. Provide material product data sheets, VOC levels, MSD sheets, and written application instructions including mixing requirements, specified thinners, and thinner amounts.
2. Provide a copy of the coating manufacturer’s Quality Assurance Program that assures the quality of the products from raw materials to final packaging.

3. Thinners must be provided by the manufacturer. Requests to use reagent-grade generic thinners instead of manufacturer-supplied thinners must be provided to the Engineer in writing, together with a letter from the coating manufacturer that supports the use of the generic thinner. Do not use a generic thinner without written approval from the Engineer.

4. Provide the manufacturer’s color designation for the color of the finish coat(s) to be used. Submit six (6) color samples of each finish coat on 8 ½ inch x 11 inch paper board to the Engineer for approval prior to application.

5. Provide the following compositional ranges for each coat (for individual components as applicable, and for the mixed material). Once accepted, these ranges will be used to accept/reject jobsite material based on the test results supplied by the coating manufacturer for each batch (see A.03, Construction Phase Submittals). Include a statement in the plan that one (1) quart retention samples of each batch (each component in the case of multi-component materials) will be provided by the manufacturer for each batch of material sent to the jobsite. The samples will be subjected to laboratory testing as directed by the Engineer. Material that does not comply with one or more of the accepted compositional values is prohibited from use and must be immediately removed from the jobsite. If the non-conforming paint has already been applied, it shall be removed from the structure and replaced at no cost to NYCDOT.

   a) % Total solids by weight, ASTM D 2369
   b) % Pigment by weight, ASTM D 2371
   c) % Metallic zinc by weight of total solids in zinc primers (using a dried film sample), ASTM D521
   d) % Total solids by volume, ASTM D 2697
   e) Weight per gallon (grams per liter), ASTM D 1475
   f) Viscosity (Stormer @ 25°C) KU, ASTM D 562
   g) Volatile Organic Compounds (VOC), ASTM D 3960
   h) 60° Specular Gloss of finish coat, ASTM D 523
   i) Infrared Identification - of individual components and of the mixed coating for 2 component materials. For the individual components, obtain each spectrum by sandwiching a small quantity (i.e., 1-2 drops) of material between 2 potassium bromide plates and obtaining a transmission infrared spectrum. For the mixed and cured material, use a potassium bromide pellet technique.
6. When the use of caulking is specified in the Special Provisions, provide the name, generic type, and MSDS for the proposed material. The caulking must be approved by the coating manufacturer. Include a letter from the coating manufacturer acknowledging acceptance of the caulking for use with the coating system.

7. In the event of a conflict between the manufacturer’s technical data and the requirements of this Section, advise the Engineer of the discrepancies in writing, and comply with the Engineer’s written resolution.

J. **Sensitive Natural Resources and Endangered or Protected Species**

1. The NYCDOT will stipulate whether sensitive natural resource areas are located around the project. If the project is located in a natural resource area, develop a site-specific Habitat Protection Plan addressing the steps that will be taken to protect these sensitive ecological areas from damage.

2. The NYCDOT will advise whether peregrine falcons, barn owls or red-tailed hawks are nesting on the bridge. If peregrine falcons, barn owls or red-tailed hawks are found to be nesting on the bridge, either before the work begins, or once the work is underway, develop a site-specific plan for the sequencing of paint removal operations to avoid disturbing nesting pairs. Include provisions for obtaining the required Federal USF&WS and NYSDEC permits if it is proposed that unoccupied peregrine falcon nests be moved.

K. **Field Noise Permits and Noise Mitigation and Monitoring Plan**

1. If work will be performed outside of the hours of 7AM to 6PM on weekdays or on weekends, obtain a permit authorizing these activities, and provide the Engineer with a copy.

2. Provide a Noise Mitigation and Monitoring Plan, identifying the steps that will be taken to monitor and mitigate noise on the project. Methods include, but are not limited to sound suppression devices (mufflers) on compressed gas exhaust orifices and gasoline and diesel power sources, and enclosing noise generating equipment and operations (e.g., blast cleaning) within sound absorption barriers.

3. Include the monitoring that will be conducted to assure that noise emissions do not exceed the New York City Noise Control Code for construction equipment.

**A.02 CONSTRUCTION START UP SUBMITTALS**
A. Field Surface Preparation Test Sections

1. Prior to proceeding with production surface preparation operations in the field, provide a written summary of the results of the surface preparation evaluation. Identify the specific test locations, the equipment used, the quality of cleaning achieved, and whether the test areas were preserved or photographed for future reference.

2. Only use equipment that is approved by the Engineer on the basis of successful use on the test sections.

A.03 CONSTRUCTION PHASE SUBMITTALS AND DOCUMENTATION

A. Material Manufacturer’s Field Site Reports

1. Submit to the Engineer, a copy of the field summary reports prepared by the coating manufacturer(s) upon completion of each site visit.

2. Provide each report within 1 week after the visit.

B. Material Manufacturer’s Batch Certifications – The shop and field contractors shall provide a letter from the material manufacturer with each batch to indicate that the material meets the manufacturer’s written product specification. Include the following test results for each batch of material (individual components and the mixed material) at a minimum: solids by volume, solids by weight, weight per gallon, viscosity, and VOC content.

C. Abrasive Cleanliness Test Reports – When abrasive blast cleaning is specified, record the results of the weekly abrasive cleanliness tests in a log book or report form that is maintained at the jobsite. Make the results available for review by the Engineer at any time. Notify the Engineer immediately of unacceptable results.

D. Inspection Log – The shop and field contractors shall maintain a daily inspection log or report that itemizes the results of all quality inspections conducted by the Contractor. Recording of quality control inspections must not lag more than one day behind the progression of the Work. Make the reports immediately available for review by the Engineer upon request.
INTRODUCTION

Employees engaged in a variety of tasks are often required to work in areas where pigeons have nested, usually for long periods. Such conditions are often found in bridge structures and cold storage facilities. This nesting results in a substantial build-up of pigeon droppings, a condition which can be harmful to humans if the material is disturbed and made airborne.

Histoplasmosis is a fungal infection resulting from exposure to pigeon droppings. Infectious material enters the body usually by inhalation into the lungs, but in some cases by ingestion through the mouth into the gastrointestinal tract. Pigeons do not carry the organism that causes histoplasmosis. Histoplasmosis is caused by a soil organism that requires the moist, nutrient rich environment that large masses of droppings offer. Areas with small amounts of dried droppings pose minimal hazard.

This Safety Bulletin is intended to alert employees of this potential health hazard and establish common sense precautions to minimize exposure.

PROCEDURES

Prior to work in any area where pigeons nest, a thorough inspection should be made to determine if, and to what extent there is a build-up of material. Inspection itself requires minimum precautions such as the use of personal protective equipment, which may include gloves, rubber boots, rain suit components, goggles and a dust/nuisance respirator. Questions regarding proper equipment for this activity should be directed to the Regional Safety Representative or Employee Safety & Health Section.

If substantial material is found in the immediate work area, cleaning must be performed. Employees engaged in cleaning activity shall wear all of the personal protective equipment specified above. A high powered water hose is an effective means to remove material. If the material is to be scraped away, it must be kept wet during the entire process. Application of a cleaning agent (bleach, for example), before removal may help dissolve the material, and may be applied as a disinfectant upon the affected surfaces after the droppings have been removed. Compressed air shall not be used to remove pigeon droppings because it increases the potential for inhalation and ingestion of airborne particles and the area of potential exposure.

When cleaning has been successfully completed, the personal protective equipment specified above is no longer required. All other personal protective equipment appropriate for the task and/or location shall be used, such as fall protection, hard hat, etc.

Employees engaged in cleaning, or any other activity which involves exposure to pigeon droppings, should observe a high degree of personal hygiene, even if the exposure is casual.
Special care must be taken to wash hands thoroughly before eating or smoking.

HISTOPLASMOSIS (NYS DOT Code: SB-94-4, Date: 1/21/94), Last Update: April 20, 1999
APPENDIX C
PAINT SYSTEM TABLES

Paint System A (new steel)
   Inorganic Zinc Primer/Epoxy Intermediate/Urethane Finish (all coats shop applied)

Paint System A’-(new steel)
   Inorganic Zinc Primer/Epoxy Intermediate/Urethane Finish (primer shop applied; finish coats field applied)

Paint System B (total coating replacement)
   Epoxy Zinc Rich Primer/Epoxy Intermediate/Urethane Finish

Paint System B’ (total coating replacement – with sealer)
   Epoxy Zinc Rich Primer/Epoxy Penetrating Sealer/Epoxy Intermediate/Urethane Finish

Paint System B’’ (overcoating)
   Spot Epoxy Zinc Rich Primer/Epoxy Penetrating Sealer/Urethane Finish

Paint System C (total coating replacement)
   MCU Zinc/MCU Intermediate/MCU Finish

Paint System C’ (total coating replacement – with sealer)
   MCU Zinc/Sealer/MCU Intermediate/MCU Finish

Paint System D (total coating replacement or overcoating)
   MCU Aluminum/MCU Intermediate/MCU Finish

Paint System D’ (total coating replacement or overcoating – with sealer)
   MCU Aluminum/Sealer/MCU Intermediate/MCU Finish

Paint System E (overcoating)
   Alkyd Primer/Alkyd Intermediate/Silicone Alkyd Finish

Paint System F (overcoating)
   Alkyd Primer/Aluminum Alkyd Finish

Paint System G (total coating replacement)
   Aluminum Epoxy Mastic Primer/Epoxy Intermediate/Urethane Finish

Paint System I (repainting I bars)
   Localized Crystalline Calcium Sulfonate penetrating Sealer/Finish

Paint System J (total coating replacement)
   Aluminum Epoxy Mastic Primer/Epoxy Intermediate/Urethane Finish
Paint System K (total coating replacement)
   Epoxy Zinc Rich Primer/Epoxy Intermediate/Polysiloxane Finish

Paint System K’ (total coating replacement – with sealer)
   Epoxy Zinc Rich Primer/Epoxy Penetrating Sealer/Epoxy Intermediate/Polysiloxane Finish

Paint System L (total coating of bare galvanize)
   Spot MCU Zinc Primer/Full MCU Intermediate/Full MCU Finish

Paint System L’ (overcoating painted galvanize – with sealer)
   Spot MCU Zinc Primer/Full MCU Penetrating Sealer/Full MCU Finish

Paint System M (total coating of bare galvanize)
   Spot Epoxy Zinc Primer/Full Epoxy Intermediate/Full Urethane Finish

Paint System M’ (overcoating painted galvanize – with sealer)
   Spot Epoxy Zinc Primer/Full Epoxy Penetrating Sealer/Full Urethane Finish

Paint System N (total coating of bare galvanize)
   Spot Epoxy Zinc Primer/Full Epoxy Intermediate/Full Polysiloxane Finish

Paint System N’ (overcoating painted galvanize – with sealer)
   Spot Epoxy Zinc Primer/Full Epoxy Penetrating Sealer/ Full Polysiloxane Finish

Paint System O (new concrete, coating replacement, or overcoating)
   Acrylic/Acrylic
PAINT SYSTEM A and A’
(NEW STEEL)
INORGANIC ZINC PRIMER / EPOXY INTERMEDIATE / URETHANE FINISH

DESCRIPTION

This system is used for the shop painting of new steel with a coat of inorganic zinc primer (with a wet on wet stripe coat), a stripe and full coat of epoxy intermediate and a full coat of urethane finish. For System A, all coats are applied in the shop followed by touch-up in the field. For System A’, the primer is applied in the shop followed by the application of the intermediate and finish coats in the field. If the inorganic zinc primer requires touch up within 24 hours of the initial application, the inorganic zinc primer is used for the touch up. If the inorganic zinc primer requires touch up longer than 24 hours after initial application, the organic zinc primer of System B is used for the touch up.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The inorganic zinc primer shall be in compliance with SSPC Paint 20 (Type I) with a minimum 80% zinc content in the dry film. The intermediate coat shall be a high build epoxy polyamide intermediate. The finish shall be an aliphatic acrylic urethane with total isocyanate group content (by percentage, pigment free basis) of 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Prepare the surfaces to SSPC-SP 10, Near-White Blast Cleaning, unless stipulated otherwise in the Special Requirements. Provide an angular surface profile of 2.0 to 4.5 mils. When all coats are applied in the shop (System A), mask faying and contact surfaces to prevent the application of the intermediate and finish coats to these areas (only apply the zinc primer). When the primer is applied in the shop followed by field topcoats (System A’), take special care to thoroughly clean the primer of all dirt, debris, grease, and oil in accordance with SSPC-SP1, Solvent Cleaning, prior to applying the field coats. If zinc salts are present, pressure wash the surface to remove the salts prior to topcoating.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) - 40% to 90%

COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for each coat of this paint system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 3-4 mils
Intermediate: 3-5 mils
Finish: 2-3 mils

NOTE: For shop measurements, comply with Appendix 4 of SSPC-PA2. When coatings are applied to rolled beam sections and plate girders in the shop, measure the thickness of each coat at the frequencies identified in Appendix A.4.2.1 (Full DFT Determination – Beam/Girder) of SSPC-PA2. For all other steel coated in the shop, measure the thickness in accordance with the frequencies identified in Appendix A.2.2 (Full DFT Determination – Miscellaneous Parts).

For all measurements in the field, comply with the standard frequencies of SSPC-PA2 (not Appendix 4).

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, no maximum (may verify cure prior to application of intermediate coat by solvent rub test according to ASTM D4752)

NOTE: Apply a stripe coat of primer first followed by the full coat of primer while the stripe coat is still tacky.

NOTE: If the primer is too thin or requires repair, the same inorganic zinc material can be used if it is applied within 24 hours of the initial application, and if it is applied in strict accordance with the manufacturer’s instructions for coating inorganic zinc with inorganic zinc. If the prime coat has cured more than 24 hours, use the epoxy zinc primer of System B to build thickness or for repair.

Intermediate – 8 hours minimum, 30 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)

Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)
EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
PAINT SYSTEM A and A’*
(NEW STEEL)
INORGANIC ZINC PRIMER / EPOXY INTERMEDIATE / URETHANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Primer (3-pak)</td>
<td>Dimetcote 9H</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amercoat 385</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450 H</td>
</tr>
<tr>
<td>Carbozine</td>
<td>Primer (3-pak)</td>
<td>Carbozinc 11 HS</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134 HS</td>
</tr>
<tr>
<td>ICI-Devoe Coatings</td>
<td>Primer (3-pak)</td>
<td>Catha-Coat 304V</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Devran 224HS</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Devthane 359</td>
</tr>
<tr>
<td>International</td>
<td>Primer (2-pak)</td>
<td>Interzinc 22HS</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Interseal 670HS</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Interthane 990HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer (2-pak)</td>
<td>Zinc-Clad II Plus</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Macropoxy 646</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrolon 218 HS</td>
</tr>
</tbody>
</table>

*System A involves the application of all coats in the shop.

*System A’ involves the application of the primer in the shop and the intermediate and finish coats in the field. For System A’, before applying the field intermediate coat, thoroughly clean the entire shop-primed surface, spot clean corrosion and damage, and spot prime using the appropriate epoxy zinc primer listed in System B.
PAINT SYSTEM B
(TOTAL COATING REPLACEMENT)
EPOXY ZINC-RICH PRIMER / EPOXY INTERMEDIATE / URETHANE FINISH

DESCRIPTION

This system is used for steel that is completely blast cleaned with all coats applied in the field. Paint System B involves the use of a stripe and full coat of epoxy zinc rich primer/stripe and full coat of epoxy intermediate/and a full coat of urethane finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be a high build epoxy polyamide. The finish shall be an aliphatic acrylic urethane with total isocyanate group content (by percentage, pigment free basis) of 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Prepare the surfaces to SSPC-SP 10, Near White Blast Cleaning, unless stipulated otherwise in the Special Requirements. Provide an angular surface profile of 2.0 to 4.5 mils. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) - 10% to 85%

COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for each coat of this system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 3-5 mils
Intermediate: 3-5 mils  
Finish: 2-3 mils  

**RECOAT TIMES**

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, 30 days maximum  
Intermediate - 8 hours minimum, 30 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)  
Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

**EQUIVALENT SYSTEMS**

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.  
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.  
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.  
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.  
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
# Paint System B
(Total Coating Replacement)
Epoxy Zinc Rich Primer / Epoxy Intermediate / Urethane Finish

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Primer (3-pak)</td>
<td>Amercoat 68 HS</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 399</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450 H</td>
</tr>
<tr>
<td>Carboline</td>
<td>Primer (3-pak)</td>
<td>Carbozinc 859</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134 HS</td>
</tr>
<tr>
<td>ICI-Devoe Coatings</td>
<td>Primer (2-pak)</td>
<td>Cathacoat 313</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Devran 224 HS</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Devthane 359</td>
</tr>
<tr>
<td>MAB</td>
<td>Primer (3-pak)</td>
<td>Ply-Tile Epoxy Organic Zinc Rich Primer</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Ply-Mastic 650</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Ply-Thane 890HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer (2-pak)</td>
<td>Zinc Clad III HS</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Macropoxy 646</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrolon 218 HS</td>
</tr>
</tbody>
</table>
PAINT SYSTEM B'  
(TOTAL COATING REPLACEMENT – WITH SEALER)  
EPOXY ZINC-RICH PRIMER / EPOXY PENETRATING SEALER / EPOXY INTERMEDIATE / URETHANE FINISH  

DESCRIPTION  

This system is used for steel that is completely blast cleaned with all coats applied in the field. Paint System B' involves the use of a stripe and full coat of epoxy zinc rich primer/stripe coat of epoxy penetrating sealer/full coat of epoxy intermediate/and a full coat of urethane finish.  

PAINT SYSTEM REQUIREMENTS  

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be a high build epoxy polyamide. The finish shall be an aliphatic acrylic urethane with total isocyanate group content (by percentage, pigment free basis) of 2%. The penetrating sealer shall be a high-solids, low viscosity epoxy material. All coatings shall be lead and chromate free.  

SURFACE PREPARATION  

Prepare the surfaces to SSPC-SP-10, Near-White Blast Cleaning, unless stipulated otherwise in the Special Provisions. Provide an angular surface profile of 2.0 to 4.5 mils. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.  

AMBIENT CONDITIONS  

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):  

Air and Surface Temperature - 40°F to 100°F  
Dew Point - Surface temperature at least 5°F above the dew point  
Relative Humidity (RH) - 10% to 85%  

COATING SYSTEMS AND COATING THICKNESS
Coating materials are shown on the next page. The dry film thickness for each coat of this paint system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

- **Primer:** 3-5 mils
- **Sealer:** 1-2 mils
- **Intermediate:** 3-5 mils
- **Finish:** 2-3 mils

### RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for resolution.

- **Primer** - 24 hours minimum, 30 days maximum
- **Sealer** - 24 hours minimum, 7 days maximum
- **Intermediate** - 8 hours minimum, 30 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)
- **Finish** - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application).

### EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.
Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM B'
(TOTAL COATING REPLACEMENT – WITH SEALER)
EPOXY ZINC-RICH PRIMER / EPOXY PENETRATING SEALER / EPOXY INTERMEDIATE / URETHANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Primer (3-pak)</td>
<td>Amercoat 68HS</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Amerlock Sealer</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 399</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450H</td>
</tr>
<tr>
<td>Carboline</td>
<td>Primer (3-pak)</td>
<td>Carbozinc 859</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Rustbond Series</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134HS</td>
</tr>
<tr>
<td>ICI-Devoe Coatings</td>
<td>Primer (2-pak)</td>
<td>Catha-Coat 313</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Pre-Prime 167</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Devran 224HS</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Devthane 359</td>
</tr>
<tr>
<td>MAB</td>
<td>Primer (3-pak)</td>
<td>Ply-Tile Epoxy Organic Zinc Rich Primer</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Ply-Tile Rust Seal</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Ply-Mastic 650</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Ply-Thane 890 HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer (2-pak)</td>
<td>Zinc Clad III HS</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Macropoxy 920</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Macropoxy 646</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrlon 218 HS</td>
</tr>
</tbody>
</table>

### PAINT SYSTEM B"
(OVERCOATING)
SPOT EPOXY ZINC-RICH PRIMER / EPOXY PENETRATING SEALER / URETHANE FINISH
DESCRIPTION

This system is used for overcoating existing surfaces as designated. System B" involves the use of a spot coat of an epoxy zinc-rich primer on all areas of bare metal, followed by a full coat of an epoxy penetrating sealer and a full coat of urethane. This system is intended for overcoating existing coatings when the adjacent steel is coated to bare metal with System B or System B'.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The penetrating sealer shall be a high-solids, low viscosity epoxy material. The finish shall be an aliphatic acrylic urethane finish with total isocyanate group content (by percentage, pigment free basis) of 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Prepare the surfaces designated to be overcoated by low or high pressure water cleaning, supplemented by scrubbing with stiff-bristled, non-metallic scrub brushes to remove all surface debris, chalk, and deteriorated coatings. Supplement the water cleaning with power tool cleaning to SSPC-SP 15, Commercial Grade Power Tool Cleaning in areas of corrosion or damaged coating. Thoroughly and uniformly hand/power sand the existing intact coating to remove the gloss and completely roughen the existing finish. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) - 10% to 85%

COATING SYSTEMS AND COATING THICKNESS
Coating materials are shown below. The dry film thickness for each coat of this paint system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Spot Primer: 3-5 mils  
Sealer:     1-2 mils  
Finish:     2-3 mils  

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for resolution.

Spot Primer - 24 hours minimum, 30 days maximum  
Sealer - 24 hours minimum, 7 days maximum  
Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application).

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.
Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

**PAINT SYSTEM B’”**  
(OVERCOATING)  
SPOT EPOXY ZINC-RICH PRIMER / EPOXY PENETRATING SEALER / URETHANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Spot Primer (3-pak)</td>
<td>Amercoat 68HS</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Amerlock Sealer</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450H</td>
</tr>
<tr>
<td>Carboline</td>
<td>Spot Primer (3-pak)</td>
<td>Carbozinc 859</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Rustbond Series</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134HS</td>
</tr>
<tr>
<td>ICI-Devoe Coatings</td>
<td>Spot Primer (2-pak)</td>
<td>Catha-Coat 313</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Pre-Prime 167</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Devthane 359</td>
</tr>
<tr>
<td>MAB</td>
<td>Spot Primer (3-pak)</td>
<td>Ply-Tile Epoxy Organic Zinc Rich Primer</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Ply-Tile Rust Seal</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Ply-Than 890 HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Spot Primer (2-pak)</td>
<td>Zinc Clad III HS</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Macropoxy 920</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrolon 218 HS</td>
</tr>
</tbody>
</table>
PAINT SYSTEM C and C’  
(TOTAL COATING REPLACEMENT)  
MOISTURE-CURE URETHANE (MCU) ZINC PRIMER /
MCU INTERMEDIATE / MCU FINISH

DESCRIPTION

This system is used for the repainting of existing steel prepared by abrasive blast cleaning. Paint System C involves the use of a stripe and full coat of moisture cure urethane (MCU) zinc, a stripe and full coat of MCU intermediate, and a full coat of MCU finish.

System C’ involves the use of a stripe and full coat of MCU zinc, a stripe coat of MCU penetrating sealer, a full coat of MCU intermediate, and a full coat of MCU finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The MCU zinc primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be an MCU material with a minimum of 25% natural or synthetic lamellar micaceous iron oxide (MIO), by weight of pigment. The finish coat shall be an aliphatic acrylic MCU material. For System C’, an MCU penetrating sealer coat is used between the prime and intermediate coats. The sealer shall be a high solids, low viscosity MCU material. The total isocyanate group content (by percentage, pigment free basis) shall be as follows: primer 4%, intermediate/sealer 4%, and finish 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Prepare the surfaces to SSPC-SP 10, Near White Blast Cleaning, unless stipulated otherwise in the Special Requirements. Provide an angular surface profile of 2.0 to 4.5 mils. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 35°F to 100°F
Dew Point - Surface temperature above the dew point and no visible moisture or dew present
Relative Humidity (RH) – 30% to 99%
COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for this System shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 3-4 mils
Sealer*: 1-2 mils
Intermediate: 3-5 mils
Finish: 3-4 mils
*Sealer used for System C’ only.

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, 30 days maximum
Sealer* - 24 hours minimum, 30 days maximum
Intermediate - 24 hours minimum, 30 days maximum
Finish - 24 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

*Sealer used for System C’ only.

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
Be submitted with product literature and a reference list of bridge painting projects where
the system was used, and the name, telephone number, and contact person of the bridge
owner and Contractor who applied them.

Be certified by the manufacturer in writing that the coating will perform comparably to
the paint systems listed below when applied in accordance with the requirements of this
specification.

Any additional time required to obtain approval for paint systems other than those listed below
shall not be a basis for obtaining an extension of time for completion of the project.

**PAINT SYSTEM C AND C’**
(TOTAL COATING REPLACEMENT)
MOISTURE CURE URETHANE (MCU) ZINC PRIMER /
MCU INTERMEDIATE / MCU FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherwin-Williams</td>
<td>Primer</td>
<td>Corothane I GalvaPak B65G10/B69D210</td>
</tr>
<tr>
<td></td>
<td>Sealer*</td>
<td>Corothane I Preprime B65C10</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Corothane I MIO-Aluminum B65S14</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Corothane I HS B65-50</td>
</tr>
<tr>
<td>Wasser</td>
<td>Primer</td>
<td>MC-Zinc</td>
</tr>
<tr>
<td></td>
<td>Sealer*</td>
<td>MC-Prepbond</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>MC-Ferox B</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>MC-Luster</td>
</tr>
</tbody>
</table>

*Note: The sealer is used for System C’ only.
PAINT SYSTEM D and D’
(TOTAL COATING REPLACEMENT OR OVERCOATING)
MOISTURE-CURE URETHANE (MCU) ALUMINUM /
MCU INTERMEDIATE / MCU FINISH

DESCRIPTION

This system is used for the repainting of existing steel prepared by abrasive blast cleaning or power tool cleaning. It may also be used for overcoating an existing intact system, including cables. System D involves the use of a stripe and full coat of moisture cure urethane (MCU) aluminum, a stripe and full coat of MCU intermediate, and a full coat of MCU finish.

System D’ involves the use of a stripe and full coat of MCU aluminum, a stripe coat of MCU penetrating sealer, a full coat of MCU intermediate, and a full coat of MCU finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The primer shall be an MCU aluminum material. The intermediate coat shall be an MCU material. The finish coat shall be an aliphatic acrylic MCU material. For System D’, an MCU penetrating sealer coat is used between the prime and intermediate coats (or prior to the primer if stipulated in the Special Requirements). The sealer material shall be a high solids, low viscosity MCU material. Total coating binder solids of polyisocyanate by weight shall be as follows: primer 4%, sealer/intermediate 4%, and finish 2%. The prime and intermediate coats (excluding sealer) shall contain not less than 25% natural or synthetic lamellar micaceous iron oxide (MIO), by weight of pigment. All coatings shall be lead and chromate free.

SURFACE PREPARATION

When completely replacing a coating system, remove all existing paint in accordance with SSPC-SP 6, Commercial Blast Cleaning, unless stipulated otherwise in the Special Requirements. Provide an angular surface profile of 2.0 to 4.5 mils.

When used for overcoating, prepare localized corrosion and deteriorated coating in accordance with SP 6 or SSPC-SP 3, Power Tool Cleaning. Prepare the remaining intact coating by pressure washing.

When used on cables, conduct water washing and scrubbing with stiff bristled non-metallic scrub brushes to remove all surface debris, chalk, and loose deteriorated coatings. Do not use pressurized water in excess of 150 psi. Supplement the water cleaning with hand tools in accordance with SSPC-SP 2, “Hand Tool Cleaning.” Use power tool cleaning in accordance with SSPC-SP 3, “Power Tool Cleaning” only upon specific approval of the Engineer.
Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

**AMBIENT CONDITIONS**

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

- Air and Surface Temperature - 35°F to 100°F
- Dew Point - Surface temperature above the dew point and no visible moisture or dew present
- Relative Humidity (RH) – 30% to 99%

**COATING SYSTEMS AND COATING THICKNESS**

Coating materials are shown on the next page. The dry film thickness shall be as follows (if the selected manufacturer recommends a different thickness range, provide the range to the Engineer in writing for resolution):

- Primer: 2-3 mils
- Sealer*: 1-2 mils
- Intermediate: 3-5 mils
- Finish: 3-4 mils

*Sealer used for System D' only (Note, when specified in the Special Requirements, apply the seal coat before the application of the primer rather than after).

**RECOAT TIMES**

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

- Primer – 6 hours minimum, 24 hours maximum
- Sealer* - 24 hours minimum, 30 days maximum
- Intermediate - 24 hours minimum, 30 days maximum
- Finish - 24 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

*Sealer used for System D’ only. (Note, when specified in the Special Requirements, apply the seal coat before the application of the primer rather than after).
EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.
### PAINT SYSTEM D and D'  
(TOTAL COATING REPLACEMENT OR OVERCOATING)  
MOISTURE CURE URETHANE (MCU) ALUMINUM PRIMER /  
MCU INTERMEDIATE / MCU FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherwin-Williams</td>
<td>Primer</td>
<td>Corothane I MIO-Aluminum B65S14</td>
</tr>
<tr>
<td></td>
<td>Sealer*</td>
<td>Corothane I Preprime B65C10</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Corothane I IronOx B</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Corothane I HS B65-50</td>
</tr>
<tr>
<td>Wasser</td>
<td>Primer</td>
<td>MC-MIO Aluminum</td>
</tr>
<tr>
<td></td>
<td>Sealer*</td>
<td>MC-Prepbond</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Ferrox B</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>MC-Luster</td>
</tr>
</tbody>
</table>

*Sealer used for System D’ only.  When specified in the Special Requirements, apply the seal coat prior to the application of the primer.
PAINT SYSTEM E
(OVERCOATING)
ALKYD PRIMER / ALKYD INTERMEDIATE / SILICONE ALKYD FINISH

DESCRIPTION

This system is used for the spot repair and overcoating of existing intact coatings. The silicone alkyd modification in the finish provides a higher degree of color and gloss retention than an unmodified alkyd. System E involves the application of a spot coat of alkyd primer, a full coat of alkyd intermediate, and a full coat of silicone alkyd finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The primer shall be a medium or long oil length alkyd. The intermediate and finish coats shall be medium or long oil length alkyls, with a minimum of 30% silicone modification in the finish. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Prepare localized corrosion and deteriorated coating in accordance with SSPC-SP 6, Commercial Blast Cleaning or SSPC-SP 3, Power Tool Cleaning, unless stipulated otherwise in the Special Requirements. Prepare the remaining intact coating by pressure washing.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) – 30% to 80%

COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for each coat of this system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 2-3 mils
Intermediate: 3-5 mils
Finish: 3-4 mils
RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50%RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, 30 days maximum  
Intermediate – 24 hours minimum, 30 days maximum  
Finish – 24 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
### PAINT SYSTEM E
(OVERCOATING)
ALKYD PRIMER / ALKYD INTERMEDIATE / SILICONE ALKYD FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carboline</td>
<td>Primer</td>
<td>Carbocoat 2900</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carbocoat 2900</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbocoat 30R</td>
</tr>
<tr>
<td>Keeler &amp; Long</td>
<td>Primer</td>
<td>Tri-Polar Primer KL6040 Series</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Tri-Polar Primer KL6040 Series</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Kolor-Sil Enamel KLF Series</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer</td>
<td>Kem Bond HS Universal Metal Primer</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Kem Bond HS Universal Metal Primer</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Steel Master 9500</td>
</tr>
</tbody>
</table>
PAINT SYSTEM F
(OVERCOATING)
ALKYD PRIMER / ALUMINUM ALKYD FINISH

DESCRIPTION

This system is typically used for the spot repair and overcoating of cables and involves the application of a full coat of alkyd primer and a full coat of aluminum alkyd finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The primer and finish coats shall be medium to long-oil length alkyds. The finish coat shall have leafing aluminum pigments. Refer to NYSDOT Standard Specifications Section 708-08 “Ready Mixed Aluminum Paint” and SSPC Paint Specification No. 102 (Leafing – Type I) for other requirements of this material. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Conduct water washing and scrubbing of the cables with stiff bristled non-metallic scrub brushes to remove all surface debris, chalk, and loose deteriorated coatings in accordance with Section 3.09I. Do not use pressurized water in excess of 150psi. Supplement the water cleaning with hand tools in accordance with SSPC-SP 2, “Hand Tool Cleaning.” Use power tool cleaning in accordance with SSPC-SP 3, “Power Tool Cleaning,” only upon specific approval of the Engineer.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) - 30% to 80%

COATING SYSTEMS AND COATING THICKNESS
Coating materials are shown on the next page. The dry film thickness for each coat of this system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 2-4 mils
Finish: 1-1.5 mils

**RECOAT TIMES**

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50%RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, 30 days maximum
Finish – minimum of 24 hours, 30 days maximum

**EQUIVALENT SYSTEMS**

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.
Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM F
**OVERCOATING**
ALKYD PRIMER / ALUMINUM ALKYD FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carboline</td>
<td>Primer</td>
<td>Carbocoat 2900</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbocoat 139 Aluminum</td>
</tr>
<tr>
<td>Keeler &amp; Long</td>
<td>Primer</td>
<td>Tri-Polar Primer KL6040 Series</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>B-1 Series 0992 Aluminum</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer</td>
<td>Kem Bond HS Universal Metal Primer</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Silver-Brite Aluminum Paint</td>
</tr>
</tbody>
</table>
PAINT SYSTEM G  
(TOTAL COATING REPLACEMENT)  
ALUMINUM EPOXY MASTIC PRIMER / EPOXY INTERMEDIATE / URETHANE FINISH

DESCRIPTION

This system is used for steel that is completely blast cleaned with all coats applied in the field. System G involves the application of a stripe and full coat of aluminum epoxy mastic, full coat of epoxy intermediate, and a full coat of urethane finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e. <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The primer shall be a surface tolerant aluminum epoxy mastic. The intermediate coat shall be a high build epoxy polyamide. The finish shall be an aliphatic acrylic urethane finish with total isocyanate group content (by percentage, pigment free basis) of 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Prepare the surfaces to SSPC-SP 6, Commercial Blast Cleaning. Provide an angular surface profile of 2.0 to 4.5 mils. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements, for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

- Air and Surface Temperature - 50°F to 100°F
- Dew Point - Surface temperature at least 5°F above the dew point
- Relative Humidity (RH) - less than 85%

COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for each coat of this system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 3-5 mils
Intermediate: 3-5 mils
Finish: 2-3 mils

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer - 24 hours minimum, 30 days maximum
Intermediate - 8 hours minimum, 30 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)
Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
## PAINT SYSTEM G
(TOTAL COATING REPLACEMENT)
ALUMINUM EPOXY MASTIC PRIMER/ EPOXY INTERMEDIATE / URETHANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Primer</td>
<td>Amerlock 2 AL</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 2</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450 H</td>
</tr>
<tr>
<td>Carboline</td>
<td>Primer</td>
<td>Carbomastic 90</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134 HS</td>
</tr>
<tr>
<td>Keeler &amp; Long</td>
<td>Primer</td>
<td>Kolormastic II KL1800</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Kolor-Poxy Fast Dry Primer KLC3250 Series</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrythane High Build KLYC650</td>
</tr>
<tr>
<td>MAB</td>
<td>Primer</td>
<td>Ply-Mastic Epoxy (044054 Aluminum)</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Ply-Mastic 650</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Ply-Thane 890 HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer</td>
<td>Epoxy Mastic Aluminum II</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Macropoxy 646</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrolon 218 HS</td>
</tr>
</tbody>
</table>
PAINT SYSTEM I  
(REPAINTING I BARS)  
LOCALIZED CRYSTALLINE CALCIUM SULFONATE (CCS) PENETRATING SEALER/FINISH

DESCRIPTION

This system is used for the repainting of existing tensioned steel eye bars and associated structural steel components (eye bar heads, pins, pin collars, pin ends, end caps and nuts). The surfaces are prepared by abrasive blast cleaning and power tool cleaning, followed by application of Paint System B’ (Epoxy Zinc-Rich Primer/Epoxy Penetrating Sealer/Epoxy Intermediate/Urethane Finish). Following curing of System B’, the two-coat System I shall be applied at pin connection areas and all I-Bar surfaces 5 feet beyond the pin connection. System I is a two-coat crystalline calcium sulfonate (CCS) system consisting of a full coat of penetrating sealer/primer applied as the first coat and a full coat of crystalline calcium sulfonate finish.

PAINT SYSTEM REQUIREMENTS

See Paint System B’ for the requirements of that system. The calcium sulfonate coatings shall be VOC-compliant in accordance with the current New York Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <340 grams/liter or 2.8 pounds/gallon). The penetrating sealer/primer shall be a one-component surface tolerant modified crystalline calcium sulfonate coating, applied by spray, brush or roller. The topcoat shall be a one-component surface tolerant modified calcium sulfonate coating applied by spray, brush or roller. All coats shall have a higher affinity for metal than does water, and therefore be able to displace water in tight difficult to coat areas (overlapping plates, joints, etc.). All coats shall be ultraviolet (UV) stable. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Prepare I-bars and associated structural steel components to bare steel in accordance with SSPC-SP 10, Near-White Blast Cleaning. Provide an angular surface profile of 2.0 to 4.5 mils. Prior to blast cleaning, remove pack rust using power tools as specified in Section 3.09, with special attention to areas of limited access (e.g., areas where I-bars converge to the pin connection). Limited access areas are defined in Section 3.08. Any existing coating, corrosion, or mill scale allowed to remain in these areas must be tightly adherent. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply System B’ according to the requirements of that system. Apply the calcium sulfonate coatings of System I under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):
Air and Surface Temperature - 40°F to 110°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity – up to 90%

COATING SYSTEMS AND COATING THICKNESS

See System B’ for the coating materials and requirements of that system. Coating materials for the calcium sulfonate coatings of System I are shown below. The dry film thickness for each coat of System I shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer/Sealer: 3-5 mils general application thickness, but flood steel joints, crevices, cables, back to back angles, etc.
Finish: 3-5 mils

RECOAT TIMES

See System B’ for the requirements of that system. Maintain the following minimum and maximum recoat times for System I. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer/Sealer – 4 hours minimum, no maximum
Finish – Not applicable

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
• Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM I
(REPAINTING I BARS)
LOCALIZED CRYSTALLINE CALCIUM SULFONATE (CCS) PENETRATING SEALER/FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termarust Technologies</td>
<td>Primer/Sealer</td>
<td>Termarust Series 2200LV Penetrant/Sealer</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Termarust Series 2100 Self Priming Topcoat</td>
</tr>
<tr>
<td>Watson Coatings</td>
<td>Primer/Sealer</td>
<td>Armor-Shield AS-8204 (AI) Penetrant (2.8 lb/gal low VOC version)</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Armor-Shield 8300 Series</td>
</tr>
</tbody>
</table>
PAINT SYSTEM J
(TOTAL COATING REPLACEMENT)
ALUMINUM EPOXY MASTIC PRIMER / EPOXY INTERMEDIATE / URETHANE FINISH

DESCRIPTION

This system is used for the repainting of steel where all existing coating is removed, but intact mill scale and traces of tightly adherent corrosion are allowed to remain. System J involves the application of a stripe and full coat of aluminum epoxy mastic, full coat of epoxy intermediate, and a full coat of urethane finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <340 grams/liter or 2.8 pounds/gallon). The primer shall be a surface tolerant aluminum epoxy mastic. The intermediate coat shall be a high build epoxy polyamide. The finish coat shall be an aliphatic acrylic urethane with total isocyanate group content (by percentage, pigment free basis) of 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

All existing paint shall be removed, but intact mill scale and traces of tightly adherent corrosion are allowed to remain. For areas with active rusting, remove loose rust and loose mill scale in accordance with SSPC-SP 3, Power Tool Cleaning. One or more of the following surface preparation methods may be used to achieve this end result: hand tool cleaning, power tool cleaning, vacuum-shrouded power tool cleaning, chemical stripping, pressurized water jetting, wet abrasive blasting, dry abrasive blast cleaning and/or vacuum blasting. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 50°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) – 10% to 85%
COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for each coat of this paint system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 3-5 mils
Intermediate: 3-5 mils
Finish: 2-3 mils

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, 30 days maximum
Intermediate – 8 hours minimum, 30 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)
Finish – 24 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application).

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.
Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Cost associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM J
(TOTAL COATING REPLACEMENT)
ALUMINUM EPOXY MASTIC PRIMER / EPOXY INTERMEDIATE / URETHANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Primer</td>
<td>Amerlock 2 AL</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 2</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450H</td>
</tr>
<tr>
<td>Carboline</td>
<td>Primer</td>
<td>Carbomastic 90</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134HS</td>
</tr>
<tr>
<td>Keeler &amp; Long</td>
<td>Primer</td>
<td>Kolormastic II KL1800</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>KolorPoxy 3200</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrythane High Build</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KLYC650</td>
</tr>
<tr>
<td>MAB</td>
<td>Primer</td>
<td>Ply-Mastic (044054 Aluminum)</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Ply-Mastic 650</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Ply-Thane 890HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer</td>
<td>Epoxy Mastic Aluminum II</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Macropoxy 646</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrolon 218 HS</td>
</tr>
</tbody>
</table>
PAINT SYSTEM K  
(TOTAL COATING REPLACEMENT)  
EPOXY ZINC-RICH PRIMER / EPOXY INTERMEDIATE / POLYSILOXANE FINISH

DESCRIPTION

This system is used for steel that is completely blast cleaned with all coats applied in the field. Paint System K involves the use of a stripe and full coat of epoxy zinc rich primer/stripe and full coat of epoxy intermediate/and a full coat of polysiloxane finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be a high build epoxy polyamide. The finish shall be a polysiloxane. All coatings shall be lead, chromate and cadmium free.

SURFACE PREPARATION

Prepare the surfaces to SSPC-SP 10, Near White Blast Cleaning, unless stipulated otherwise in the Special Requirements. Provide an angular surface profile of 2.0 to 4.5 mils. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F  
Dew Point - Surface temperature at least 5°F above the dew point  
Relative Humidity (RH) - 10% to 85%

COATING SYSTEMS AND COATING THICKNESS

Coating materials and the dry film thickness for each coat are provided on the last page. If the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution.

RECOAT TIMES
Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, 30 days maximum
Intermediate - 8 hours minimum, 14 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)
Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the primer and intermediate components of the system were used together, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them. Submit a reference list of steel structures where the intermediate and finish components were used together.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
# PAINT SYSTEM K
(TOTAL COATING REPLACEMENT)
EPOXY ZINC RICH PRIMER / EPOXY INTERMEDIATE / POLYSILOXANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
<th>Dry Film Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Primer (3-pak)</td>
<td>Amercoat 68 HS</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 399</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>PSX 700 H</td>
<td>3 to 7 mils</td>
</tr>
<tr>
<td>Carboline</td>
<td>Primer (3-pak)</td>
<td>Carbozinc 859</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carboxane 2000</td>
<td>3 to 7 mils</td>
</tr>
<tr>
<td>International Paints</td>
<td>Primer (2-pak)</td>
<td>Interzinc 52</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Intergard 475HS</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Interfine 878</td>
<td>2 to 3 mils</td>
</tr>
</tbody>
</table>
PAINT SYSTEM K'
(TOTAL COATING REPLACEMENT – WITH SEALER)
EPOXY ZINC-RICH PRIMER / EPOXY PENETRATING SEALER / EPOXY INTERMEDIATE / POLYSILOXANE FINISH

DESCRIPTION

This system is used for steel that is completely blast cleaned with all coats applied in the field. Paint System K' involves a stripe and full coat of epoxy zinc rich primer/striped coat of epoxy penetrating sealer/full coat of epoxy intermediate/and a full coat of polysiloxane finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be a high build epoxy polyamide. The finish shall be a polysiloxane. The penetrating sealer shall be a high-solids, low viscosity epoxy material. All coatings shall be lead, chromate, and cadmium free.

SURFACE PREPARATION

Prepare the surfaces to SSPC-SP-10, Near-White Blast Cleaning, unless stipulated otherwise in the Special Provisions. Provide an angular surface profile of 2.0 to 4.5 mils. Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) - 10% to 85%

COATING SYSTEMS AND COATING THICKNESS

Coating materials and the dry film thickness for each coat are provided on the last page. If the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution.

RECOAT TIMES
Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for resolution.

Primer - 24 hours minimum, 30 days maximum  
Sealer - 24 hours minimum, 7 days maximum  
Intermediate - 8 hours minimum, 14 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)  
Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application).

**EQUIVALENT SYSTEMS**

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.  
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.  
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.  
- Be submitted with product literature and a reference list of bridge painting projects where the primer and intermediate components of the system were used together, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them. Submit a reference list of steel structures where the intermediate and finish components were used together.  
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
PAINT SYSTEM K'  
(TOTAL COATING REPLACEMENT – WITH SEALER)  
EPOXY ZINC-RICH PRIMER / EPOXY PENETRATING SEALER / EPOXY INTERMEDIATE / POLYSILOXANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
<th>Dry Film Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Primer (3-pak)</td>
<td>Amercoat 68 HS</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Amerlock Sealer</td>
<td>1 to 2 mils</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 399</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>PSX 700 H</td>
<td>3 to 7 mils</td>
</tr>
<tr>
<td>Carboline</td>
<td>Primer (3-pak)</td>
<td>Carbozinc 859</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Rustbond Series</td>
<td>1 to 2 mils</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carboxane 2000</td>
<td>3 to 7 mils</td>
</tr>
<tr>
<td>International Paints</td>
<td>Primer (2-pak)</td>
<td>Interzinc 52</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Interbond 600</td>
<td>1 to 2 mils</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Intergard 475HS</td>
<td>3 to 5 mils</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Interfine 878</td>
<td>2 to 3 mils</td>
</tr>
</tbody>
</table>
PAINT SYSTEM L
(TOTAL COATING OF BARE GALVANIZED STEEL)
SPOT MOISTURE-CURE URETHANE (MCU) ZINC PRIMER / FULL MCU INTERMEDIATE / FULL MCU FINISH

DESCRIPTION
This system is used for painting previously unpainted galvanized steel (new and weathered). Paint System L involves the use of a spot coat of an MCU zinc-rich primer on all areas of bare steel, followed by a stripe and full coat of an MCU intermediate, and a full coat of an MCU finish.

PAINT SYSTEM REQUIREMENTS
The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The spot moisture-cure urethane (MCU) zinc primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be an MCU material with a minimum of 25% natural or synthetic lamellar micaceous iron oxide (MIO), by weight of pigment. The finish shall be an aliphatic acrylic MCU material. Total isocyanate group content (by percentage, pigment free basis) shall be as follows: primer 4%, intermediate 4%, and finish 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION
Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan. Prior to surface preparation, use a solution of copper sulfate to confirm that oil, chromate treatment, or other passivator is not present on new galvanizing. An acceptable test procedure is provided after the paint system table. If the test result indicates a passivator is present, prepare the surfaces by Sweep Blasting as described below. Repeat the test with copper sulfate to confirm whether the passivator has been removed. If it is present, continue surface preparation until it is removed.

If a passivator is not present on new galvanizing, or if the galvanizing is weathered, prepare the surfaces by Sweep Blasting or Chemical Cleaning, unless stipulated otherwise in the Special Requirements.

For Sweep Blasting, prepare the surfaces as specified in ASTM D 6386. Provide dense and uniform roughening of the galvanizing, but use abrasives, pressures, and techniques that minimize the amount of galvanizing that is removed. Prepare areas of corrosion (red rust) in accordance with SSPC-SP 6, Commercial Blast Cleaning.

For Chemical Cleaning, initially clean the surfaces by low or high pressure water cleaning. Supplement the water cleaning with power tool cleaning to SSPC-SP 15, Commercial Grade
Power Tool Cleaning in rusted areas. Treat all surfaces with pre-paint cleaner applied in accordance with the manufacturer’s published instructions. The pre-paint cleaner material shall consist of a water-reducible phosphoric acid and detergent blend formulated to prepare galvanized surfaces for coating. Dilute the pre-paint cleaner with potable water to the strongest concentration as recommended by the manufacturer. Observe the manufacturer’s recommended contact times with the galvanized surfaces being cleaned while constantly scrubbing the cleaner over the surface with a moderately aggressive, synthetic abrasive pad. Thoroughly rinse and neutralize the surface with potable water to achieve a neutral pH of 7. If neutral pH is not achieved re-rinse as necessary. Allow thorough drying of the surface prior to painting. Before coating, remove any white powder or other residues that may occur on the cleaned galvanized surfaces by wiping with a clean, dry, cloth.

**AMBIENT CONDITIONS**

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

- **Air and Surface Temperature** - 35°F to 100°F
- **Dew Point** - Surface temperature above the dew point and no visible moisture or dew present
- **Relative Humidity (RH)** - 30% to 99%

**COATING SYSTEMS AND COATING THICKNESS**

Coating materials are shown on the next page. The dry film thickness for each coat of this system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

- **Primer**: 3-4 mils
- **Intermediate**: 3-5 mils
- **Finish**: 3-4 mils

**RECOAT TIMES**

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

- **Primer** – 24 hours minimum, 30 days maximum
- **Intermediate** - 24 hours minimum, 30 days maximum
- **Finish** - 24 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)
EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
PAINT SYSTEM L
(TOTAL COATING OF BARE GALVANIZED STEEL)
SPOT MOISTURE-CURE URETHANE (MCU) ZINC PRIMER / FULL MCU INTERMEDIATE / FULL MCU FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherwin-Williams</td>
<td>Spot Primer</td>
<td>Corothane I GalvaPak B65G10/B69D210</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Corothane I MIO-Aluminum B65S14</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Corothane I HS B65-50</td>
</tr>
<tr>
<td>Wasser</td>
<td>Spot Primer</td>
<td>MC-Zinc</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>MC-Ferox B</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>MC-Luster</td>
</tr>
</tbody>
</table>

TEST FOR CHROMATE TREATMENT AND OIL

New galvanizing may be treated with oil, hexavalent chromium solution, or other passivating treatment to prevent wet storage stain. These treatments can interfere with the adhesion of coatings if not removed. The presence of oil or a passivating treatment can be determined using a copper sulfate solution. Prepare the solution by dissolving 20 grams of copper sulfate crystals in one liter of deionized water. Mark off three adjacent areas on the galvanized surface. Leave one area untouched, solvent wash the second area, and solvent wash/sand the third area. Saturate a cotton swab with the copper sulfate solution and apply to all areas.

If the first area turns black, no oil or passivator is present. If the first area does not turn black, an interference material is present and the second and third areas need to be examined. If the second and third areas turn black at the same time (and in less than 10 seconds), there is no passivator on the surface, but oil is present on the galvanizing that must be removed. If the second area (unsanded, solvent washed) turns slower than the third, or does not turn at all, a passivator is present and must be removed.
PAINT SYSTEM L’
(OVERCOATING OF PREVIOUSLY PAINTED GALVANIZED STEEL)
SPOT MOISTURE-CURE URETHANE (MCU) ZINC PRIMER / FULL MCU
PENETRATING SEALER / FULL MCU FINISH

DESCRIPTION

This system is used for overcoating previously painted galvanized steel. Paint System L’ involves the use of a spot coat of an MCU zinc-rich primer on all areas of bare steel, followed by a full coat of MCU penetrating sealer and a full coat of MCU finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The spot moisture-cure urethane (MCU) zinc primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate sealer shall be a high solids, low viscosity MCU material. The finish shall be an aliphatic acrylic MCU material. Total isocyanate group content (by percentage, pigment free basis) shall be as follows: primer 4%, sealer 4%, and finish 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan. Remove loose coating and prepare the bare galvanized surfaces by pressure washing and power tool cleaning, or Brush-Off Blast Cleaning/Sweep Blasting, unless stipulated otherwise in the Special Requirements.

For pressure washing, use Low Pressure Water Cleaning in accordance with SSPC-SP 12 to remove all loose coating. If loose coating remains after cleaning, increase the pressures until all loose coating is removed. Prepare rusted areas in accordance with SSPC-SP 15, Commercial Grade Power Tool Cleaning. Power tool clean (e.g., power sand) exposed galvanized steel in accordance with SSPC-SP 3 to roughen the surface.

For Brush-Off Blast Cleaning, subject the entire surface to the abrasive blast to locate and remove all loose coating. For exposed galvanized steel, Sweep Blast the surface in accordance with the requirements of ASTM D 6386. Provide dense and uniform roughening of the galvanizing, but use abrasives, pressures, and techniques that minimize the amount of galvanizing that is removed. Prepare areas of corrosion in accordance with SSPC-SP 6, Commercial Blast Cleaning.

For all methods of preparation, feather the edges of remaining coating until a sound, intact perimeter is achieved.
AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 35°F to 100°F
Dew Point - Surface temperature above the dew point - no visible moisture or dew present
Relative Humidity (RH) - 30% to 99%

COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for each coat of this system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 3-4 mils
Sealer: 1-2 mils
Finish: 3-4 mils

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 24 hours minimum, 30 days maximum
Sealer - 24 hours minimum, 30 days maximum
Finish - 24 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM L’
**(OVERCOATING OF PREVIOUSLY PAINTED GALVANIZED STEEL)
SPOT MOISTURE-CURE URETHANE (MCU) ZINC PRIMER / FULL MCU PENETRATING SEALER / FULL MCU FINISH**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherwin-Williams</td>
<td>Spot Primer</td>
<td>Corothane I GalvaPak B65G10/B69D210</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Corothane I Preprime B65C10</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Corothane I HS B65-50</td>
</tr>
<tr>
<td>Wasser</td>
<td>Spot Primer</td>
<td>MC-Zinc</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>MC-Prepbond</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>MC-Luster</td>
</tr>
</tbody>
</table>
PAINT SYSTEM M
(TOTAL COATING OF BARE GALVANIZED STEEL)
SPOT EPOXY ZINC-RICH PRIMER / FULL EPOXY INTERMEDIATE / FULL URETHANE FINISH

DESCRIPTION

This system is used for painting previously unpainted galvanized steel (new and weathered). Paint System M involves the use of a spot coat of epoxy zinc rich primer on areas of bare steel, a stripe and full coat of epoxy intermediate, and a full coat of urethane finish. This system is intended for coating galvanized steel when the adjacent carbon steel is coated with System B or System B’.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The spot epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be a high build epoxy polyamide. The finish shall be an aliphatic acrylic urethane with total isocyanate group content (by percentage, pigment free basis) of 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan. Prior to surface preparation, use a solution of copper sulfate to confirm that oil, chromate treatment, or other passivator is not present on new galvanizing. An acceptable test procedure is provided after the paint system table. If the test result indicates a passivator is present, prepare the surfaces by Sweep Blasting as described below. Repeat the test with copper sulfate to confirm whether the passivator has been removed. If it is present, continue surface preparation until it is removed.

If a passivator is not present on new galvanizing, or if the galvanizing is weathered, prepare the surfaces by Sweep Blasting or Chemical Cleaning, unless stipulated otherwise in the Special Requirements.

For Sweep Blasting, prepare the surfaces as specified in ASTM D 6386. Provide dense and uniform roughening of the galvanizing, but use abrasives, pressures, and techniques that minimize the amount of galvanizing that is removed. Prepare areas of corrosion (red rust) in accordance with SSPC-SP 6, Commercial Blast Cleaning.

For Chemical Cleaning, initially clean the surfaces by low or high pressure water cleaning. Supplement the water cleaning with power tool cleaning to SSPC-SP 15, Commercial Grade.
Power Tool Cleaning in rusted areas. Treat all surfaces with pre-paint cleaner applied in accordance with the manufacturer’s published instructions. The pre-paint cleaner material shall consist of a water-reducible phosphoric acid and detergent blend formulated to prepare galvanized surfaces for coating. Dilute the pre-paint cleaner with potable water to the strongest concentration as recommended by the manufacturer. Observe the manufacturer’s recommended contact times with the galvanized surfaces being cleaned while constantly scrubbing the cleaner over the surface with a moderately aggressive, synthetic abrasive pad. Thoroughly rinse and neutralize the surface with potable water to achieve a neutral pH of 7. If neutral pH is not achieved re-rinse as necessary. Allow thorough drying of the surface prior to painting. Before coating, remove any white powder or other residues that may occur on the cleaned galvanized surfaces by wiping with a clean, dry, cloth.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

- Air and Surface Temperature - 40°F to 100°F
- Dew Point - Surface temperature at least 5°F above the dew point
- Relative Humidity (RH) - 10% to 85%

COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. The dry film thickness for each coat of this system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

- Primer: 3-5 mils
- Intermediate: 3-5 mils
- Finish: 2-3 mils

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

- Primer – 24 hours minimum, 30 days maximum
- Intermediate - 8 hours minimum, 30 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)
- Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

EQUIVALENT SYSTEMS
The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM M

**TOTAL COATING OF BARE GALVANIZED STEEL**

**SPOT EPOXY ZINC-RICH PRIMER / FULL EPOXY INTERMEDIATE / FULL URETHANE FINISH**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Spot Primer (3-pak)</td>
<td>Amercoat 68 HS</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 399</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450 H</td>
</tr>
<tr>
<td>Carboline</td>
<td>Spot Primer (3-pak)</td>
<td>Carbozinc 859</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134 HS</td>
</tr>
<tr>
<td>ICI-Devoe Coatings</td>
<td>Spot Primer (2-pak)</td>
<td>Cathacoat 313</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Devran 224 HS</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Devthane 359</td>
</tr>
<tr>
<td>MAB</td>
<td>Spot Primer (3-pak)</td>
<td>Ply-Tile Epoxy</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organic Zinc Rich</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Primer</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Ply-Mastic 650</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ply-Thane 890HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Spot Primer (2-pak)</td>
<td>Zinc Clad III HS</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Macropoxy 646</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrolon 218 HS</td>
</tr>
</tbody>
</table>

**TEST FOR CHROMATE TREATMENT AND OIL**

New galvanizing may be treated with oil, hexavalent chromium solution, or other passivating treatment to prevent wet storage stain. These treatments can interfere with the adhesion of coatings if not removed. The presence of oil or a passivating treatment can be determined using a copper sulfate solution. Prepare the solution by dissolving 20 grams of copper sulfate crystals in one liter of deionized water. Mark off three adjacent areas on the galvanized surface. Leave one area untouched, solvent wash the second area, and solvent wash/sand the third area. Saturate a cotton swab with the copper sulfate solution and apply to all areas.

If the first area turns black, no oil or passivator is present. If the first area does not turn black, an interference material is present and the second and third areas need to be examined. If the second and third areas turn black at the same time (and in less than 10 seconds), there is no passivator on the surface, but oil is present on the galvanizing that must be removed. If the second area (unsanded, solvent washed) turns slower than the third, or does not turn at all, a passivator is present and must be removed.
PAINT SYSTEM M’
(OVERCOATING OF PREVIOUSLY PAINTED GALVANIZED STEEL)
SPOT EPOXY ZINC-RICH PRIMER / FULL EPOXY PENETRATING SEALER /
FULL URETHANE FINISH

DESCRIPTION

This system is used for overcoating previously painted galvanized steel. Paint System M’ involves the use of a spot coat of epoxy zinc-rich primer on all areas of bare steel, followed by a full coat of epoxy penetrating sealer and a full coat of urethane.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The spot epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The penetrating sealer shall be a high-solids, low viscosity epoxy material. The finish shall be an aliphatic acrylic urethane finish with total isocyanate group content (by percentage, pigment free basis) of 2%. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan. Remove loose coating and prepare the bare galvanized surfaces by pressure washing and power tool cleaning, or Brush-Off Blast Cleaning/Sweep Blasting, unless stipulated otherwise in the Special Requirements.

For pressure washing, use Low Pressure Water Cleaning in accordance with SSPC-SP 12 to remove all loose coating. If loose coating remains after cleaning, increase the pressures until all loose coating is removed. Prepare rusted areas in accordance with SSPC-SP 15, Commercial Grade Power Tool Cleaning. Power tool clean (e.g., power sand) exposed galvanized steel in accordance with the requirements of ASTM D 6386. Provide dense and uniform roughening of the galvanizing, but use abrasives, pressures, and techniques that minimize the amount of galvanizing that is removed. Prepare areas of corrosion in accordance with SSPC-SP 6, Commercial Blast Cleaning.

For Brush-Off Blast Cleaning, subject the entire surface to the abrasive blast to locate and remove all loose coating. For exposed galvanized steel, Sweep Blast the surface in accordance with the requirements of ASTM D 6386. Provide dense and uniform roughening of the galvanizing, but use abrasives, pressures, and techniques that minimize the amount of galvanizing that is removed. Prepare areas of corrosion in accordance with SSPC-SP 6, Commercial Blast Cleaning.

For all methods of preparation, feather the edges of remaining coating until a sound, intact perimeter is achieved.
AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

- Air and Surface Temperature - 40°F to 100°F
- Dew Point - Surface temperature at least 5°F above the dew point
- Relative Humidity (RH) - 10% to 85%

COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown below. The dry film thickness for each coat of this paint system shall be as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

- Spot Primer: 3-5 mils
- Sealer: 1-2 mils
- Finish: 2-3 mils

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for resolution.

- Spot Primer - 24 hours minimum, 30 days maximum
- Sealer - 24 hours minimum, 7 days maximum
- Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application).

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
• Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
• Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
• Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM M’
**(OVERCOATING OF PREVIOUSLY PAINTED GALVANIZED STEEL)**
**SPOT EPOXY ZINC-RICH PRIMER / FULL EPOXY PENETRATING SEALER / FULL URETHANE FINISH**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Spot Primer (3-pak)</td>
<td>Amercoat 68HS</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Amerlock Sealer</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Amercoat 450H</td>
</tr>
<tr>
<td>Carboline</td>
<td>Spot Primer (3-pak)</td>
<td>Carbozinc 859</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Rustbond Series</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbothane 134HS</td>
</tr>
<tr>
<td>ICI-Devoe Coatings</td>
<td>Spot Primer (2-pak)</td>
<td>Catha-Coat 313</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Pre-Prime 167</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Devthane 359</td>
</tr>
<tr>
<td>MAB</td>
<td>Spot Primer (3-pak)</td>
<td>Ply-Tile Epoxy Organic Zinc</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Ply-Tile Rust Seal</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Ply-Thane 890 HS</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Spot Primer (2-pak)</td>
<td>Zinc Clad III HS</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Macropoxy 920</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Acrolon 218 HS</td>
</tr>
</tbody>
</table>
PAINT SYSTEM N  
(TOTAL COATING OF BARE GALVANIZED STEEL)  
SPOT EPOXY ZINC-RICH PRIMER / FULL EPOXY INTERMEDIATE / FULL POLYSILOXANE FINISH

DESCRIPTION

This system is used for painting previously unpainted galvanized steel (new and weathered). It involves the use of a spot coat of epoxy zinc rich primer on areas of bare steel, a stripe and full coat of epoxy intermediate, and a full coat of polysiloxane finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The intermediate coat shall be a high build epoxy polyamide. The finish shall be a polysiloxane. All coatings shall be lead, chromate and cadmium free.

SURFACE PREPARATION

Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan. Prior to surface preparation, use a solution of copper sulfate to confirm that oil, chromate treatment, or other passivator is not present on new galvanizing. An acceptable test procedure is provided after the paint system table. If the test result indicates a passivator is present, prepare the surfaces by Sweep Blasting as described below. Repeat the test with copper sulfate to confirm whether the passivator has been removed. If it is present, continue surface preparation until it is removed.

If a passivator is not present on new galvanizing, or if the galvanizing is weathered, prepare the surfaces by Sweep Blasting or Chemical Cleaning, unless stipulated otherwise in the Special Requirements.

For Sweep Blasting, prepare the surfaces as specified in ASTM D 6386. Provide dense and uniform roughening of the galvanizing, but use abrasives, pressures, and techniques that minimize the amount of galvanizing that is removed. Prepare areas of corrosion (red rust) in accordance with SSPC-SP 6, Commercial Blast Cleaning.

For Chemical Cleaning, initially clean the surfaces by low or high pressure water cleaning. Supplement the water cleaning with power tool cleaning to SSPC-SP 15, Commercial Grade Power Tool Cleaning in rusted areas. Treat all surfaces with pre-paint cleaner applied in accordance with the manufacturer’s published instructions. The pre-paint cleaner material shall consist of a water-reducible phosphoric acid and detergent blend formulated to prepare...
galvanized surfaces for coating. Dilute the pre-paint cleaner with potable water to the strongest concentration as recommended by the manufacturer. Observe the manufacturer’s recommended contact times with the galvanized surfaces being cleaned while constantly scrubbing the cleaner over the surface with a moderately aggressive, synthetic abrasive pad. Thoroughly rinse and neutralize the surface with potable water to achieve a neutral pH of 7. If neutral pH is not achieved re-rinse as necessary. Allow thorough drying of the surface prior to painting. Before coating, remove any white powder or other residues that may occur on the cleaned galvanized surfaces by wiping with a clean, dry, cloth.

**AMBIENT CONDITIONS**

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

- **Air and Surface Temperature** - 40°F to 100°F
- **Dew Point** - Surface temperature at least 5°F above the dew point
- **Relative Humidity (RH)** - 10% to 85%

**COATING SYSTEMS AND COATING THICKNESS**

Coating materials and the dry film thickness for each coat are provided on the last page. If the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution.

**RECOAT TIMES**

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

- **Primer** – 24 hours minimum, 30 days maximum
- **Intermediate** - 8 hours minimum, 14 days maximum (application of finish coat beyond this time may require additional preparation as specified by the manufacturer)
- **Finish** - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application)

**EQUIVALENT SYSTEMS**
The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the primer and intermediate components of the system were used together, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them. Submit a reference list of steel structures where the intermediate and finish components were used together.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

### PAINT SYSTEM N

**(TOTAL COATING OF BARE GALVANIZED STEEL)**

**SPOT EPOXY ZINC RICH PRIMER / FULL EPOXY INTERMEDIATE / FULL POLYSILOXANE FINISH**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
<th>Dry Film Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Spot Primer (3-pak)</td>
<td>Amercoat 68 HS</td>
<td>3 to 5 mils (spot coat)</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Amerlock 399</td>
<td>3 to 5 mils (full coat)</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>PSX 700 H</td>
<td>3 to 7 mils (full coat)</td>
</tr>
<tr>
<td>Carboline</td>
<td>Spot Primer (3-pak)</td>
<td>Carbozinc 859</td>
<td>3 to 5 mils (spot coat)</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>Carboguard 888</td>
<td>3 to 5 mils (full coat)</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carboxane 2000</td>
<td>3 to 7 mils (full coat)</td>
</tr>
<tr>
<td>International Paints</td>
<td>Spot Primer (2-pak)</td>
<td>Interzinc 52</td>
<td>3 to 5 mils (spot coat)</td>
</tr>
</tbody>
</table>
Intermediate | Intergard 475HS | 3 to 5 mils (full coat)
Finish | Interfine 878 | 2 to 3 mils (full coat)

TEST FOR CHROMATE TREATMENT AND OIL

New galvanizing may be treated with oil, hexavalent chromium solution, or other passivating treatment to prevent wet storage stain. These treatments can interfere with the adhesion of coatings if not removed. The presence of oil or a passivating treatment can be determined using a copper sulfate solution. Prepare the solution by dissolving 20 grams of copper sulfate crystals in one liter of deionized water. Mark off three adjacent areas on the galvanized surface. Leave one area untouched, solvent wash the second area, and solvent wash/sand the third area. Saturate a cotton swab with the copper sulfate solution and apply to all areas.

If the first area turns black, no oil or passivator is present. If the first area does not turn black, an interference material is present and the second and third areas need to be examined. If the second and third areas turn black at the same time (and in less than 10 seconds), there is no passivator on the surface, but oil is present on the galvanizing that must be removed. If the second area (unsanded, solvent washed) turns slower than the third, or does not turn at all, a passivator is present and must be removed.
PAINT SYSTEM N'
(OVERCOATING OF PREVIOUSLY PAINTED GALVANIZED STEEL)
SPOT EPOXY ZINC-RICH PRIMER / FULL EPOXY PENETRATING
SEALER / FULL POLYSILOXANE FINISH

DESCRIPTION

This system is used for overcoating previously painted galvanized steel. It involves the use of a spot coat of epoxy zinc rich primer, a full coat of epoxy penetrating sealer, and a full coat of polysiloxane finish.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCRR Part 205 (i.e., <500 grams/liter or 4.2 pounds/gallon for metallic pigmented coatings and <340 grams/liter or 2.8 pounds/gallon for industrial maintenance coatings). The epoxy zinc-rich primer shall be in compliance with SSPC Paint 20 (Type II) with a minimum 80% zinc content in the dry film. The penetrating sealer shall be a high-solids, low viscosity epoxy material. The finish shall be a polysiloxane. All coatings shall be lead, chromate, and cadmium free.

SURFACE PREPARATION

Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan. Remove loose coating and prepare the bare galvanized surfaces by pressure washing and power tool cleaning, or Brush-Off Blast Cleaning/Sweep Blasting, unless stipulated otherwise in the Special Requirements.

For pressure washing, use Low Pressure Water Cleaning in accordance with SSPC-SP 12 to remove all loose coating. If loose coating remains after cleaning, increase the pressures until all loose coating is removed. Prepare rusted areas in accordance with SSPC-SP 15, Commercial Grade Power Tool Cleaning. Power tool clean (e.g., power sand) exposed galvanized steel in accordance with SSPC-SP 3 to roughen the surface.

For Brush-Off Blast Cleaning, subject the entire surface to the abrasive blast to locate and remove all loose coating. For exposed galvanized steel, Sweep Blast the surface in accordance with the requirements of ASTM D 6386. Provide dense and uniform roughening of the galvanizing, but use abrasives, pressures, and techniques that minimize the amount of galvanizing that is removed. Prepare areas of corrosion in accordance with SSPC-SP 6, Commercial Blast Cleaning.

For all methods of preparation, feather the edges of remaining coating until a sound, intact perimeter is achieved.

AMBIENT CONDITIONS
Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

Air and Surface Temperature - 40°F to 100°F
Dew Point - Surface temperature at least 5°F above the dew point
Relative Humidity (RH) - 10% to 85%

COATING SYSTEMS AND COATING THICKNESS

Coating materials and the dry film thickness for each coat are provided on the last page. If the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution.

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for resolution.

Primer - 24 hours minimum, 30 days maximum
Sealer - 24 hours minimum, 7 days maximum
Finish - 8 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application).

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. Equivalency can be established through completion of NTPEP testing, including the required field history, provided the test results equal or exceed the results achieved by systems in this table that have completed NTPEP testing. If the proposed system does not have appropriate NTPEP testing/field history, the proposed system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the primer and intermediate components of the system were used together, and the name, telephone number, and contact person of the bridge owner and Contractor who applied
them. Submit a reference list of steel structures where the intermediate and finish components were used together.

- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Costs associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.

## PAINT SYSTEM N'
(OVERCOATING OF PREVIOUSLY PAINTED GALVANIZED STEEL)
SPOT EPOXY ZINC-RICH PRIMER / FULL EPOXY PENETRATING SEALER / FULL POLYSILOXANE FINISH

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
<th>Dry Film Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameron</td>
<td>Spot Primer (3-pak)</td>
<td>Amercoat 68 HS</td>
<td>3 to 5 mils (spot coat)</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Amerlock Sealer</td>
<td>1 to 2 mils (full coat)</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>PSX 700 H</td>
<td>3 to 7 mils (full coat)</td>
</tr>
<tr>
<td>Carboline</td>
<td>Spot Primer (3-pak)</td>
<td>Carbozinc 859</td>
<td>3 to 5 mils (spot coat)</td>
</tr>
<tr>
<td></td>
<td>Sealer</td>
<td>Rustbond Series</td>
<td>1 to 2 mils (full coat)</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carboxane 2000</td>
<td>3 to 7 mils (full coat)</td>
</tr>
<tr>
<td>International Paints$^1$</td>
<td>Spot Primer (2-pak)</td>
<td>Interzinc 52</td>
<td>3 to 5 mils (spot coat)</td>
</tr>
<tr>
<td></td>
<td>Epoxy</td>
<td>Intergard 870HS</td>
<td>3 to 5 mils (full coat)</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Interfine 878</td>
<td>2 to 3 mils (full coat)</td>
</tr>
</tbody>
</table>

1 - The International system utilizes a full coat of epoxy rather than penetrating sealer. International does not have testing for a two coat sealer/polysiloxane system (Interbond 600/Interfine 878).
PAINT SYSTEM O
(COATING OF BARE AND PREVIOUSLY PAINTED CONCRETE)
ACRYLIC PRIMER / ACRYLIC FINISH

DESCRIPTION

This system consists of the field Surface Preparation and application of a two-coat waterborne acrylic paint system. This system is typically applied to new or bare unpainted concrete, or to overcoat concrete previously painted with an acrylic system.

PAINT SYSTEM REQUIREMENTS

The paint system shall be VOC-compliant in accordance with the current New York State Department of Environmental Conservation Regulation for Architectural and Industrial Maintenance (AIM) Coatings, 6 NYCCR Part 205 (i.e., <340 grams/liter or 2.8 pounds/gallon). The primer and finish coats shall be waterborne 100% acrylic coatings. All coatings shall be lead and chromate free.

SURFACE PREPARATION

Remove grease, oil, and similar interference material from bare concrete surfaces by water cleaning, detergent water cleaning, or steam cleaning in accordance with ASTM D4258.

When the preparation of uncoated concrete or complete removal of an existing coating is specified, remove all paint, laitance, efflorescence, loose concrete, concrete fins, and other surface irregularities by mechanical abrading (power tool cleaning), water blast cleaning, or abrasive blast cleaning in accordance with ASTM D4259.

When overcoating is specified, remove all loose coating and loose materials by mechanical abrading (power tool cleaning), water blast cleaning, or abrasive blast cleaning in accordance with ASTM D4259. Prepare the remaining intact coating by pressure washing.

Note that heavy deposits of pigeon droppings may be present. Remove any pigeon droppings prior to surface preparation in accordance with the approved Histoplasmosis Plan.

AMBIENT CONDITIONS

Apply the coatings under the following ambient conditions (if the selected manufacturer recommends different requirements for ambient conditions, provide the recommendations to the Engineer in writing for resolution):

- Air and Surface Temperature - 50°F to 100°F
- Dew Point - Surface temperature at least 5°F above the dew point
- Relative Humidity (RH) - 10% to 85%
COATING SYSTEMS AND COATING THICKNESS

Coating materials are shown on the next page. Apply both coats to the entire concrete surface (for bare concrete as well as overcoating). The dry film thickness for each coat is as follows (if the selected manufacturer recommends a different thickness range, provide the recommendation to the Engineer in writing for resolution):

Primer: 2-4 mils
Finish: 2-4 mils

RECOAT TIMES

Maintain the following minimum and maximum recoat times for each coat. These times are based on approximately 75°F and 50% RH. If the selected manufacturer recommends different recoat times, provide the recommendation to the Engineer in writing for a resolution.

Primer – 4 hours minimum, 30 days maximum
Finish – 4 hours minimum, 30 days maximum (additional coats or repairs beyond this time will require abrading by sanding or other means prior to coating application).

EQUIVALENT SYSTEMS

The following specified products are designated solely as a “standard of quality.” Equivalent products may be used as approved by NYCDOT. An equivalent system shall:

- Provide comparable or superior corrosion protection, weathering resistance, and color/gloss retention relative to the paint systems listed below.
- Be a standard, regularly-produced product of the manufacturer, having been on the market for at least 4 years, and having a sales level of 1,000 gallons minimum for each coat during the past year.
- Have a minimum of two years successful field exposure on at least two entire bridge structures in a climate similar to New York City.
- Be submitted with product literature and a reference list of bridge painting projects where the system was used, and the name, telephone number, and contact person of the bridge owner and Contractor who applied them.
- Be certified by the manufacturer in writing that the coating will perform comparably to the paint systems listed below when applied in accordance with the requirements of this specification.

Any additional time required to obtain approval for paint systems other than those listed below shall not be a basis for obtaining an extension of time for completion of the project.

Cost associated with obtaining approval, as equal, of paint systems other than those listed below shall be borne by the Contractor if proposed paint system fails to gain NYCDOT approval.
## PAINT SYSTEM O
*(COATING OF BARE AND PREVIOUSLY PAINTED CONCRETE)*

**ACRYLIC PRIMER / FINISH**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Coat</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carboline</td>
<td>Primer</td>
<td>Carbocryl 3358</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>Carbocryl 3359</td>
</tr>
<tr>
<td>Sherwin-Williams</td>
<td>Primer</td>
<td>DTM Acrylic Coating</td>
</tr>
<tr>
<td></td>
<td>Finish</td>
<td>DTM Acrylic Coating</td>
</tr>
</tbody>
</table>
NAMES AND ADDRESSES OF COATING MANUFACTURERS

Ameron
1571 Phoenix Blvd. – Suite 5
Atlanta, GA 30349
888-239-4064
Fax: 770-907-1034

Carboline
449 South Ave. East
Westfield, NJ 07090
908-233-3150
Fax: 908-654-0155

DuPont
Wilson Building – Concord Center
Wilmington, DE 19898

ICI-Devoe Coatings
213 Hopkinson Street
South Plainfield, NJ 07080
908-791-9868
Fax: 908-755-7672

International
6001 Antoine
Houston, TX 77210-4806
800-422-1161

Keeler & Long
P.O. Box 460
865 Echo Lake Road
Watertown, CT 06795
860-274-6701
Fax: 860-274-5857

MAB
31 Grand Boulevard
Spotswood, NJ 08884
732-251-1312
Fax: 732-251-9385

Sherwin-Williams
226 Talmadge Road
Edison, NJ 08818
888-975-0697
Fax – 732-370-8650
Sigma Coatings  
12 Kirkwood Circle  
Brigantine, NJ 08203  
800-241-6686

Tnemec  
P.O. Box 411749  
Kansas City, MO 64141  
818-483-3400  
Fax: 818-483-3969

Wasser  
11 B Rustic Circle  
Montvale, NJ 07645  
201-573-8121  
Fax: 201-573-8121

Xymax  
1058 Edgewood Road  
New Kensington, PA 15068  
724-339-1442  
Fax: 724-339-1465
SECTION 5

NYCDOT SPECIFICATION 832 FOR LEAD PAINT REMOVAL
WORKER / ENVIRONMENTAL PROTECTION AND WASTE
HANDLING
SECTION 832
SPECIFICATION FOR
LEAD PAINT REMOVAL

WORKER/ENVIRONMENTAL PROTECTION
AND WASTE HANDLING

September 2006
# TABLE OF CONTENTS

## PART 1.0 GENERAL .........................................................................................................................1

### PURPOSE .........................................................................................................................................1

### GENERAL .........................................................................................................................................1

### CONTRACTOR QUALIFICATIONS .................................................................................................2

### COMMUNITY NOTIFICATION ........................................................................................................2

### REGULATORY COMPLIANCE ........................................................................................................2

### REFERENCE STANDARDS ...............................................................................................................3

  - Latest Edition ................................................................................................................................3
  - American Association of State Highway and Transportation Officials ........................................3
  - American Industrial Hygiene Association (AIHA) ........................................................................3
  - Code of Federal Regulations (CFR) ..............................................................................................3
  - EPA Methods ..............................................................................................................................6
  - National Institute of Occupational Safety and Health (NIOSH) Methods .....................................6
  - The Society for Protective Coatings (SSPC) ..............................................................................6
  - Codes, Rules and Regulations of the State of New York (NYCRR) ..............................................7
  - New York State DOT Specifications ............................................................................................7
  - City of New York .......................................................................................................................8
  - Suppliers (Equipment and Material Manufacturers) Published Instructions ...............................8

### SUBMITTALS – See Appendix A. 

## PART 2.0 PRODUCTS .........................................................................................................................9

### CONTAINMENT MATERIALS AND EQUIPMENT ........................................................................9

### MONITORING AND TESTING EQUIPMENT ................................................................................9

  - High Volume Ambient Air Monitoring Equipment .........................................................................9
  - Worker Exposure and Regulated Area Monitoring Equipment ...................................................10

### EMERGENCY RESPONSE EQUIPMENT .....................................................................................10

### PERSONAL PROTECTIVE EQUIPMENT AND HYGIENE FACILITIES ......................................10

### WASTE CONTAINERS ..................................................................................................................11

  - Hazardous Waste .......................................................................................................................11
  - Construction Waste .....................................................................................................................11
  - Spent Solvents ...............................................................................................................................11

### CLEANLINESS OF MATERIALS AND EQUIPMENT ......................................................................12

## PART 3.0 – EXECUTION .....................................................................................................................13

### WORKER PROTECTION .................................................................................................................13

  - General .........................................................................................................................................13
  - Pigeon Droppings ..........................................................................................................................14
  - Worker Protection Plan ...............................................................................................................14
  - Exposure Monitoring/Initial Assessment .........................................................................................15
  - Action Level ....................................................................................................................................17
  - Permissible Exposure Limit (PEL) and Threshold Limit Value (TLV) .............................................18
  - Respiratory Protection ...................................................................................................................18
  - Protective Clothing and Equipment ................................................................................................19
# Table of Contents – continued

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housekeeping</td>
<td>20</td>
</tr>
<tr>
<td>Personal Hygiene Facilities and Equipment</td>
<td>20</td>
</tr>
<tr>
<td>Medical Surveillance and Medical Removal Protection</td>
<td>21</td>
</tr>
<tr>
<td>Employee Training and Information</td>
<td>22</td>
</tr>
<tr>
<td>Signs</td>
<td>22</td>
</tr>
<tr>
<td>Parking Areas</td>
<td>23</td>
</tr>
<tr>
<td>Recordkeeping</td>
<td>23</td>
</tr>
<tr>
<td><strong>Establishment of Regulated Areas</strong></td>
<td>23</td>
</tr>
<tr>
<td><strong>Control and Monitoring of Releases to Air, Soil and Water</strong></td>
<td>25</td>
</tr>
<tr>
<td>General</td>
<td>25</td>
</tr>
<tr>
<td>Visible Emissions and Releases</td>
<td>26</td>
</tr>
<tr>
<td>High Volume Ambient Air Monitoring</td>
<td>27</td>
</tr>
<tr>
<td>Real Time Particulate Monitoring</td>
<td>28</td>
</tr>
<tr>
<td>Sensitive Natural Resources</td>
<td>29</td>
</tr>
<tr>
<td>Endangered Species</td>
<td>29</td>
</tr>
<tr>
<td>Containment</td>
<td>30</td>
</tr>
<tr>
<td>General</td>
<td>30</td>
</tr>
<tr>
<td>Noise</td>
<td>30</td>
</tr>
<tr>
<td>Containment Drawings and Submittals</td>
<td>31</td>
</tr>
<tr>
<td>Certification of Containment Installation</td>
<td>31</td>
</tr>
<tr>
<td>Containment Flooring System and Additional Collectors</td>
<td>31</td>
</tr>
<tr>
<td>Containment and Ventilation System Components</td>
<td>33</td>
</tr>
<tr>
<td>Maintenance of Existing Lighting Systems and Containment Lighting Requirements</td>
<td>35</td>
</tr>
<tr>
<td>Lockout /Tagout of Existing Electrical Systems</td>
<td>36</td>
</tr>
<tr>
<td>Protection of Drainage Systems</td>
<td>36</td>
</tr>
<tr>
<td>Work Over Water - Containment Restrictions</td>
<td>36</td>
</tr>
<tr>
<td>Inclement Weather</td>
<td>37</td>
</tr>
<tr>
<td>Waste Classification, Handling, and Disposal</td>
<td>37</td>
</tr>
<tr>
<td>General</td>
<td>37</td>
</tr>
<tr>
<td>Items Provided by the Contractor</td>
<td>38</td>
</tr>
<tr>
<td>Waste Sampling</td>
<td>38</td>
</tr>
<tr>
<td>Waste Testing</td>
<td>39</td>
</tr>
<tr>
<td>Waste Classification</td>
<td>39</td>
</tr>
<tr>
<td>Hazardous Waste Classification</td>
<td>39</td>
</tr>
<tr>
<td>Non-hazardous Waste Classification</td>
<td>40</td>
</tr>
<tr>
<td>Laboratory Report</td>
<td>40</td>
</tr>
<tr>
<td>Waste Handling, Site Transportation and Spill Containment</td>
<td>41</td>
</tr>
<tr>
<td>Labeling of Containers</td>
<td>43</td>
</tr>
<tr>
<td>Waste Transportation and Disposal</td>
<td>44</td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>44</td>
</tr>
<tr>
<td>Non-Hazardous Municipal/Construction Waste</td>
<td>45</td>
</tr>
<tr>
<td>Special Waste Requirements for Recycled Steel Grit</td>
<td>45</td>
</tr>
<tr>
<td>Waste Water Handling and Disposal</td>
<td>45</td>
</tr>
<tr>
<td>Cleaning and Clearance of Materials, Equipment, and Surrounding Surfaces</td>
<td>46</td>
</tr>
</tbody>
</table>
Table of Contents - continued

<table>
<thead>
<tr>
<th>General</th>
<th>46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Cleaning of Work Site</td>
<td>46</td>
</tr>
<tr>
<td>Cleaning of Containment</td>
<td>47</td>
</tr>
<tr>
<td>Cleaning of Contractor Equipment and Materials</td>
<td>47</td>
</tr>
<tr>
<td>Final Cleaning/Clearance of Surrounding Property and Structures</td>
<td>48</td>
</tr>
</tbody>
</table>

**METHOD OF MEASUREMENT** .................................................................................................. 49
- Worker Protection Plan ................................................................................................. 49
- Environmental Protection and Project Cleanup ......................................................... 49
- Containment System ..................................................................................................... 49
- Disposal of Paint Removal Waste and Waste Water .................................................. 50
- Community Notification ............................................................................................... 50

**BASIS OF PAYMENT** ............................................................................................................ 50
- General .......................................................................................................................... 50
- Worker Protection Plan ................................................................................................. 50
- Environmental Protection and Project Cleanup ......................................................... 52
- Containment System ...................................................................................................... 52
- Disposal of Paint Removal Waste and Waste Water .................................................. 54
- Community Notification ............................................................................................... 50
- Pay Items ........................................................................................................................ 55

**APPENDIX A – SUBMITTALS** .................................................................................................. A-1

**GENERAL** .......................................................................................................................... A-1

**PRE-CONSTRUCTION SUBMITTALS** ........................................................................................ A-1

- Submittal Schedule and Engineer Acceptance ............................................................... A-1
- Project Schedule ............................................................................................................. A-1
- Qualifications, Experience, and Certifications ............................................................ A-1
- Contractor Chain of Command ...................................................................................... A-3
- Worker Protection Plan ................................................................................................. A-4
- Environmental Protection Plan ...................................................................................... A-7
- Spill Response Plan ........................................................................................................ A-9
- Noise Permits .................................................................................................................. A-10
- Containment Plans and Drawings .................................................................................. A-10
- Emergency Containment Demobilization Plan ............................................................... A-12
- Lockout/Tagout Plan ....................................................................................................... A-13
- Waste Management Plan ................................................................................................. A-13
  - Waste Handling, Storage, and Disposal ..................................................................... A-13
  - Hazardous Waste Transportation .............................................................................. A-13
  - Hazardous Waste Disposal ....................................................................................... A-13
  - Waste Water Disposal Information ........................................................................... A-14
  - Non-Hazardous Waste Transportation and Disposal Information ........................... A-15

**CONSTRUCTION START UP SUBMITTALS** ............................................................................. A-15

- Worker Protection ............................................................................................................ A-15
- Certification of Containment Installation ................................................................. A-16

**CONSTRUCTION PHASE SUBMITTALS** ................................................................................. A-16
Table of Contents – continued

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent Person Daily Reports</td>
<td>A-16</td>
</tr>
<tr>
<td>Worker Protection</td>
<td>A-16</td>
</tr>
<tr>
<td>Visible Emissions and Releases</td>
<td>A-18</td>
</tr>
<tr>
<td>Regulated Area Monitoring</td>
<td>A-18</td>
</tr>
<tr>
<td>Containment Scaffolding Inspection Log</td>
<td>A-19</td>
</tr>
<tr>
<td>Temporary Heating Units</td>
<td>A-19</td>
</tr>
<tr>
<td>Waste Management</td>
<td>A-19</td>
</tr>
<tr>
<td>Waste Storage Logs</td>
<td>A-19</td>
</tr>
<tr>
<td>Waste Analysis Reports</td>
<td>A-19</td>
</tr>
<tr>
<td>Waste Manifests and Disposal Documentation</td>
<td>A-19</td>
</tr>
<tr>
<td>Daily and Final Project Clean-up</td>
<td>A-20</td>
</tr>
</tbody>
</table>

APPENDIX B – TERMS AND DEFINITIONS

APPENDIX C – NYSDOT SAFETY BULLETIN SB-94-4, HISTOPLASMOSIS

List of Tables

Table 1
Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals
SECTION 832
SPECIFICATION FOR LEAD PAINT REMOVAL -
WORKER/ENVIRONMENTAL PROTECTION AND WASTE HANDLING

PART 1.0 GENERAL

1.01 PURPOSE

A. This Specification sets out the requirements for worker protection, containment system design and use, environmental protection, and waste disposal during the removal and disposal of coatings containing lead and other toxic metals from NYCDOT bridges. The purpose is to assure that the public, workers, and the environment are properly protected from potential exposure to toxic metals in these coatings during paint removal operations.

B. The Contractor is responsible and liable for the remediation of all damages caused by the Work, and any required clean up or repair activities.

1.02 GENERAL

A. The Contractor is responsible for compliance with all personal monitoring required under OSHA regulations, and is required to maintain:

1. A competent person at the project site to observe and monitor work activities, and to oversee the implementation of the Worker Protection Plan, Environmental Protection Plan, Waste Handling Plan, and Containment performance. Authorize the competent person to take prompt corrective measures to rectify any observed problems with the control over emissions, protection of workers, and management of the waste streams. The competent person shall be independent of all other responsibilities on the project and shall not serve in a worker or supervisory capacity. The competent person must be SSPC C-3 trained and have OSHA 40 hour HAZWOPER certification plus annual 8 hour refresher training. Qualifications of the competent person are presented in Appendix A.

2. An Industrial Hygienist (IH) to oversee the development of Worker Protection Plans, and to conduct monthly site visits to confirm that the Work is being performed in accordance with the submitted plans. Qualifications of the IH are presented in Appendix A.

B. The NYCDOT or REI will be employing an environmental consultant to monitor the paint removal project and ensure compliance with NYCDOT specifications and applicable regulations. The Contractor shall coordinate project activities with the environmental consultant, and initiate any action that is necessary to correct
specification violations identified by the environmental consultant. The environmental consultant has the authority to halt any operation involving the generation, handling, or disposal of project waste and debris if the operation violates the requirements of this specification, even if the competent person or IH did not observe the violation. In the event of a conflict between observations between the environmental consultant and the Contractor, the findings of the environmental consultant shall prevail. The presence or activities of the environmental consultant do not relieve the Contractor of the responsibility to fully comply with all aspects of this Section.

C. Project submittal requirements are itemized in Appendix A. Terms and definitions are provided in Appendix B.

1.03 CONTRACTOR QUALIFICATIONS

A. Unless otherwise specified in the Special Provisions, the painting Contractor or subcontractor that is directly performing the field cleaning and painting work shall possess SSPC-QP1 and QP2 certifications at the time of bid and throughout the duration of the project.

1.04 COMMUNITY NOTIFICATION

A. As directed by the NYCDOT, perform community notification for abrasive blasting projects. The purpose is to advise the public about the lead-paint removal operations, and plans for maintenance and protection of traffic that will be undertaken on the bridge.

B. The Contractor community notification shall include, but is not limited to providing (preparing and publishing) and distributing pamphlets and color tri-fold brochures describing the operations that will be conducted, and attending meetings with affected community members. The specific scope of work will be defined by the NYCDOT in advance. The community notification list will be provided by the NYCDOT.

1.05 REGULATORY COMPLIANCE

A. Comply with the requirements of this Section and all applicable Federal, State, and City laws, codes, and regulations, including, but not limited to the regulations of the United States Environmental Protection Agency (USEPA) and Occupational Safety and Health Administration (OSHA), New York State Department of Environmental Conservation (DEC), New York State Department of Health (NYS DOH), New York State Department of Labor (NYS DOL), and the New York City Department of Environmental Protection (NYC DEP). Codes, Rules and Regulations of the State of New York (NYCRR) are administered by the NYS Department of Environmental Conservation, Albany, NY. EPA regulations are administered by the US Environmental Protection Agency, Region
2, NY, NY.

B. Identification of the items in this specification that are of specific interest to the NYCDOT in no way relieves the Contractor of the responsibility to comply with all applicable legal requirements. Moreover, compliance with Contract specifications does not relieve the Contractor of the obligation to comply with other applicable requirements. Contractor is required to comply with the Final Environmental Impact Statement that was prepared by the NYCDOT Division of Bridges. If a Federal, State, or City regulation is more restrictive than any of the requirements of this Section, the more restrictive requirements shall apply.

1.06 REFERENCE STANDARDS

A. Latest Edition - the latest edition of the following acts, regulations, guides, and standards form a part of this Specification. In the event of a conflict, comply with the most restrictive requirements. Maintain at the jobsite, a copy of all applicable reference standards.

B. American Association of State Highway and Transportation Officials (AASHTO)
   1. Standard Specifications for Highway Bridges
   2. Manual for Maintenance Inspection of Bridges

C. American Industrial Hygiene Association (AIHA)
   1. Environmental Lead Laboratory Accreditation Program (ELLAP) - paint, soil, air, dust
   2. Industrial Hygiene Accredited Laboratories (IHLAP) – metals

D. Code of Federal Regulations (CFR)
   1. 29 CFR 1910, Occupational Safety and Health Regulations for General Industry
   2. 29 CFR 1910.20, Access to Employee Exposure and Medical Records
   3. 29 CFR 1910.132, General Requirements for Personal Protective Equipment
   4. 29 CFR 1910.133, Eye and Face Protection
   5. 29 CFR 1910.134, Respiratory Protection
6. 29 CFR 1910.146, Permit-Required Confined Spaces
7. 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout)
9. 29 CFR 1910.1000, Air Contaminants
10. 29 CFR 1926, Occupational Safety and Health Regulations for the Construction Industry
11. 29 CFR 1926.16, Rules of Construction
13. 29 CFR 1926.21, Safety Training and Education
14. 29 CFR 1926.28, Personal Protective Equipment
15. 29 CFR 1926.32, Definition of Competent Person
16. 29 CFR 1926.51, Sanitation
17. 29 CFR 1926.52, Noise Exposure
18. 29 CFR 1926.55, Gases, Vapors, Fumes, Dusts, and Mists
19. 29 CFR 1926.57, Ventilation
20. 29 CFR 1926.59, Hazard Communication
21. 29 CFR 1926.62, Lead
22. 29 CFR 1926.101, Hearing Protection
23. 29 CFR 1926.104, Safety Belts, Lifelines, and Lanyards
24. 29 CFR 1926.154, Temporary Heating Devices
25. 29 CFR 1926.200, Accident Prevention Signs and Tags
26. 29 CFR 1926.353, Ventilation and Protection in Welding, Cutting and Heating
27. 29 CFR 1926.354, Welding, Cutting and Heating in Way of Preservative Coatings
28. 29 CFR 1926.450 - 454, Scaffolding
29. 29 CFR 1926.500 - 503, Fall Protection
30. 29 CFR 1926.1118, Inorganic Arsenic
31. 29 CFR 1926.1126, Chromium VI (hexavalent chromium)
32. 29 CFR 1926.1127, Cadmium
33. 40 CFR 50, National Primary and Secondary Ambient Air Quality Standards
34. 40 CFR 58, Ambient Air Quality Surveillance
35. 40 CFR 60, App A, Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources
37. 40 CFR 261, Appendix II, Toxicity Characteristic Leaching Procedure
38. 40 CFR 262, Standards Applicable to Generators of Hazardous Waste
39. 40 CFR 263, Standards Applicable to Transporters of Hazardous Waste
40. 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
41. 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
42. 40 CFR 265, Subpart C, Preparedness and Prevention
43. 40 CFR 265, Subpart D, Contingency Plan and Emergency Procedures
44. 40 CFR 265.16, Personnel Training
45. 40 CFR 268, Land Disposal Restrictions
46. 40 CFR 302, Designation, Reportable Quantities and Notification
47. 40 CFR 355, Emergency Planning and Notification
48. 49 CFR 171-179, Hazardous Materials Regulations

E. **EPA Methods**

1. SW 846, Test Methods for Evaluating Solid Waste - Physical/Chemical Methods

2. Method 1311, Toxicity Characteristic Leaching Procedure (TCLP)

3. Method 3050, Acid Digestion of Sediment, Sludge, and Soils

F. **National Institute of Occupational Safety and Health (NIOSH) Methods**

1. Method 7048, Cadmium

2. Method 7082, Lead

3. Method 7600, Hexavalent Chromium

4. Method 7900, Arsenic

G. **The Society for Protective Coatings (SSPC)**


7. SSPC-TU 7, Conducting Ambient Air, Soil, and Water Sampling During Surface Preparation and Paint Disturbance Activities

8. QP-1, Standard Procedure for Evaluating the Qualifications of Painting Contractors (Field Application to Complex Structures)

9. QP-2, Standard Procedure for Evaluating the Qualifications of Painting
Contractors to Remove Hazardous Paint

H. **Codes, Rules and Regulations of the State of New York (NYCRR)**

1. Title 6, Chapter III, Subchapter B, Air Resources
   a) Part 211.2, Air Pollution Prohibited
   b) Part 257, Ambient Air Quality Standards

2. Title 6, Division of Environmental Remediation
   a) Part 595, Releases of Hazardous Substances
   b) Part 597, List of Hazardous Substances

3. Title 6, Chapter X, New York State Pollutant Discharge of Water Resources Elimination System

4. Title 6, Chapter IV, Subchapter B, Solid and Hazardous Waste Law
   a) Part 364, Waste Transporter Permits
   b) Part 370, Hazardous Waste Management
   c) Part 371, Identification and Listing of Hazardous Wastes
   d) Part 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities
   e) Part 373, Treatment, Storage, and Disposal Facilities

I. **New York State DOT Specifications**

1. NYSDOT Standard Specifications for Highway Bridges

2. NYSDOT Safety Bulletin SB-94-4, Histoplasmosis

J. **City of New York**

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

2. Title 24, Chapter 2, New York City Noise Control Code
3. Noise Control Act of 1972

K. Suppliers (Equipment and Material Manufacturers) Published Instructions

1.07 SUBMITTALS – See Appendix A.
PART 2.0 PRODUCTS

2.01 CONTAINMENT MATERIALS AND EQUIPMENT

A. Supply all materials needed to contain paint removal debris in accordance with the requirements of this Specification and Construction Details. This may include, but is not limited to, ground covers, rigging, scaffolding, planking, containment materials, tarpaulins, dust collection and ventilation equipment, HEPA vacuums, water booms, boats with skimmers, and all other containment materials that may be needed.

B. Properly maintain all equipment in accordance with the NYC Noise Control Code.

C. Supply the Engineer with (1) portable light meter with a scale of 9 to 50+ foot-candles. The meter will be returned to the Contractor upon completion of the Work.

D. Do not use any materials until they have been accepted by the Engineer.

2.02 MONITORING AND TESTING EQUIPMENT

A. High Volume Ambient Air Monitoring Equipment

1. Provide, and maintain in good operating condition, all equipment necessary for the monitoring of airborne emissions in accordance with the provisions of this specification. If site conditions do not permit permanent installation for the duration of the project, install the equipment each day at locations identified by the environmental consultant. The equipment will be calibrated and used by the environmental consultant. Equipment requirements include:

   a) High volume air monitoring equipment approved for sampling in accordance with 40 CFR 50, Appendix B, equipped with collection heads for total suspended particulate (TSP). Provide mass flow or volumetric flow controlled units, equipped with a flow event recorder and an adequate supply of flow charts. Provide look up tables for the volumetric controlled units. Verify that the monitors are properly maintained in accordance with the manufacturers’ instructions. The environmental consultant will provide the filters.

   b) An ample supply of parts or spare units in order to provide up to four (4) fully operational TSP monitors on the project site each day, for each containment location, including all necessary maintenance.
c) One variable resistance calibration kit with a current (within 1 year) calibration certificate and 2 slack-tube water manometers (15-0-15 inches).

d) All equipment (e.g., generators, power cords, fuel, etc.) needed to simultaneously operate the monitors. The monitors will be sited by the environmental consultant adjacent to the bridge or at distances away from the bridge approximately equal to three times the bridge height. Provide enough support equipment to accommodate this entire range of monitor placement.

e) Security and/or secure overnight storage of the equipment (e.g., in jobsite trailers maintained by the Contractor). Note that if the paint removal work is being conducted during evening hours, professional, armed security personnel may be needed since the monitors cannot be placed into secure storage during these times.

B. Worker Exposure and Regulated Area Monitoring Equipment

1. Supply the instrumentation needed for the monitoring of worker and regulated area exposures including all equipment needed for its operation (e.g., generators, batteries, power cords, fuel, etc.).

2. Provide all necessary air monitoring cassettes for exposure monitoring. Utilize appropriate air sampling cassettes for monitoring exposure to lead and other toxic metals.

2.03 EMERGENCY RESPONSE EQUIPMENT

A. Provide all necessary personal protective equipment and emergency response equipment needed for the Project as outlined in the Contractor’s Spill Response Plan. Emergency spill response kits must be in place at all locations where petroleum or chemical products are being utilized.

2.04 PERSONAL PROTECTIVE EQUIPMENT AND HYGIENE FACILITIES

A. At each site, provide all personal protective clothing and equipment (PPE) needed to protect Contractor workers, NYCDOT employees and NYCDOT Agents (REI Consultants and environmental consultant), from project hazards, including proper cleaning and disposal. Repair or replace PPE as required to assure that it continues to provide its intended purpose.

B. Provide climate-controlled decontamination facilities.
1. Supply the number of facilities as dictated by 29 CFR 1926.51, site conditions, the Contractor’s sequence of operations, and as approved by the Contractor’s IH and Engineer. Qualifications for the Contractor’s IH are presented in Appendix A.

2. Provide facilities which contain 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 their work clothing at the end of their work shift. The “clean” area and the “dirty” area shall each have a separate entrance.

C. Provide all potable water required for drinking and hygiene purposes.

2.05 WASTE CONTAINERS

A. Hazardous Waste

1. Provide DOT-approved drums, tanks, roll-offs, or other containers of the appropriate size and type in accordance with 49 CFR 178 (e.g., 17H containers in the case of 55 gallon drums) that are suitable for any hazardous waste (liquid and solid) generated on the project. Use containers that are resistant to rust and corrosion (painted, if constructed of steel), that have tight fitting and locking lids or covers, and which are water resistant and leak proof. All containers must be in new condition, be free of any contamination and have no damage. All hazardous waste must be stored on NYCDOT bridge property.

2. Assure that the dry volume capacity of the containers, in cubic yards, is clearly marked on all containers, and that they are labeled as required by applicable Federal, State and City regulatory requirements.

B. Construction Waste - Provide all containers for non-hazardous construction waste. Use containers that are free of loose debris when brought on-site. Non-hazardous waste must be segregated from the storage of hazardous or regulated wastes.

C. Spent Solvents - Provide appropriate containers for spent solvents. Containers shall be corrosion resistant and non-reactive to the solvents. Review solvent MSDS to ensure compatibility with container materials. Containers shall be labeled in accordance with all applicable federal, state, and City regulations.

2.06 CLEANLINESS OF MATERIALS AND EQUIPMENT
A. Provide equipment and materials that are free of loose dust and debris when brought onto the bridge site. This includes, but is not limited to, containment and ventilation equipment, scaffolding, planking, metal sheeting, suspended platform materials, personal protective equipment, waste storage containers, trailers, and paint removal and abrasive recycling equipment.

B. Clean the materials and equipment and assure that they are free of loose dust and debris at the end of each shift and upon removal from the Work site. Use HEPA vacuums and/or wet wipe with an approved cleaning solution. Verify proper cleanliness by wiping a cloth across the surface. If dust or debris is dislodged, additional cleaning is required before transporting the materials or equipment off site (See Section 3.06). Settled dust (lead) sampling (wipe sampling) may be performed by the environmental consultant in order to verify cleanliness of all equipment and materials. An acceptance criteria of <400 µg/sq ft will be used. All filters in equipment, including but not limited to, dust collectors, recycling units, and HEPA vacuums, must be removed and replaced prior to equipment leaving the project site.
PART 3.0 - EXECUTION

3.01 WORKER PROTECTION

A. General

1. Conduct the Work in strict accordance with Federal OSHA, State, and City regulations governing worker protection. Develop a comprehensive Worker Protection Plan addressing the protection of the health and safety of workers from jobsite hazards, including but not limited to fall protection, confined space (if applicable), lock out/tag out, hearing and eye protection, and exposure to hazardous materials or conditions.

2. When disturbing paints, institute engineering and work practice controls to reduce worker exposures to lead and other toxic metals to as low as feasible. Work practices that disturb paints consist of, but are not limited to, paint removal activities, cutting, grinding, removal of concrete encasement and power washing. Present the proposed engineering and work practice controls in the Worker Protection Plan for Engineer review.

3. Employ an Industrial Hygienist (IH) on staff or through subcontract to develop the Worker Protection Plan, provide general oversight of the Work, and review all exposure monitoring and medical surveillance results. The IH is also required to conduct a monthly site visit and issue a monthly summary report of activities and monitoring results. See Appendix A for the qualifications of the IH and an itemization of the monthly reporting requirements.

4. In addition to the IH, assign a competent person to the Work site. See Appendix A for the qualifications of the competent person. Have the competent person inspect the Work site on a daily basis for compliance with the requirements of this Section and the approved Worker Protection Plan, and prepare a daily report or daily log of observations made. Maintain the information at the project site and make it available to the Engineer or environmental consultant for review at any time. The competent person shall have no other responsibilities on the project. The competent person can not serve as a supervisor, foreman or worker on the project.

5. Note that all worker protection requirements apply to Contractor and Subcontractor personnel working for the Contractor.

6. The requirements identified in this Section 3.0 regarding exposure to toxic metals are based on 29 CFR 1926.62, but the Contractor must protect the employees from exposure to any of the other toxic metals which may be
present in the paint and/or abrasive, as applicable, in addition to lead.

B. **Pigeon Droppings/Histoplasmosis**

1. In addition to controlling exposures to lead and other toxic metals, take special precautions when working in areas where pigeons have nested.

2. Develop and implement a worker protection plan under the direction of the IH, for the inspection and removal of pigeon droppings in accordance with NYSDOT Safety Bulletin SB-94-4 (copy attached) in Appendix C.

3. At a minimum, use disposable gloves, whole body protective clothing and a respirator while inspecting or removing the debris, followed by thorough washing of hands, face, and forearms before eating, drinking, or smoking. Provide respiratory protection appropriate to the level of exposure for all workers. Verify that all workers involved in cleaning activities involving exposure to pigeon droppings have medical clearance to utilize personal protective equipment such as respiratory protection and have been fit tested.

4. Remove and properly dispose all pigeon droppings located within containment enclosures.

C. **Worker Protection Plan**

1. Develop a written Worker Protection Plan under the direction of an IH to establish and implement practices and procedures for protecting the health and safety of employees from Project hazards in accordance with applicable OSHA requirements.

2. The Worker Protection Plan must include provisions for the protection of workers from toxic metals when exposures to lead or other toxic metals are above the OSHA Action Level. Note that while this specification addresses the protection of employees exposed lead and other toxic metals, the Worker Protection Plan must address the protection of workers from all Project hazards. Requirements for the content of the Worker Protection Plan are presented in Appendix A.

3. Revise and update the program at least every 6 months during the portion(s) of the project which involve the disturbance of toxic metals. Verify that the IH signs off on all reviews and revisions.

Toxic metals may also be present in the paint for which OSHA has not developed a comprehensive health and safety standard. In these cases, include statements that appropriate measures will be taken to assure that the workers will not be exposed above the Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV) established for the metal as identified in 29 CFR 1926.55.

5. Identify the methods of compliance that will be used to reduce worker exposures to toxic metals. Rely on respiratory protection only after feasible engineering and work practice controls have been first implemented to reduce airborne exposures.

D. Exposure Monitoring/Initial Assessment

1. Conduct initial personal exposure monitoring unless objective data is available to prove that exposures from a given activity cannot exceed the Action Level for lead or other metals contained in the coating. Provide the objective data to the Engineer in writing, signed by the Contractor’s IH. Rely upon this data in lieu of monitoring only upon acceptance by the Engineer and Environmental Consultant.

2. Collect representative personal air samples at the beginning of the lead exposure work (at project start-up) to determine employee exposures to lead and other toxic metals that might be present in the coating. Tasks resulting in the potential exposure to toxic metals include, but are not limited to, paint removal activities, installation of lead paste in cables, work site cleanup, and debris handling operations.

3. Collect full shift (at least 7 hours) air samples for workers in each job classification in each exposure area, and when requested, collect samples on the Engineer and NYCDOT Agents (REI’s or environmental consultant personnel). Provide the Engineer and Agents with the results of their analysis within the same five-day notification period required for the employees.

4. When lead is present, provide personal protective equipment for workers during the initial monitoring. Anticipate exposure levels as dictated by 29 CFR 1926.62 and as specified below. A few activities in addition to those identified by OSHA are included. Use the same level of protection when other toxic metals are found in the coating, unless OSHA has developed a comprehensive health standard for that metal (e.g., cadmium, hexavalent chromium, and inorganic arsenic). In those cases, implement the protection requirements of the standard specific to that metal.

a) Assume an exposure of 10 times the PEL (500 µg/m³): Manual demolition of structures containing lead-containing coatings or
paint (e.g., dry wall), manual scraping, manual sanding, heat gun applications, power tool cleaning with dust collection systems, and spray painting with lead paint. Although not identified in 29 CFR 1926.62, include chemical stripping, water washing, centrifugal wheel blasting, and the operation of abrasive grit recovery equipment in this category.

b) Assume an exposure in excess of 500 µg/m³: Using lead-containing mortar, lead burning, or conducting the following activities where lead-containing coatings or paint are present: rivet busting, power tool cleaning without dust collection systems, cleanup activities where dry expendable abrasives are used, and the movement and removal of abrasive blasting enclosures. Although not identified in 29 CFR 1926.62, include vacuum blasting, water jetting, and wet abrasive blasting removal of paint in this category.

c) Assume an exposure in excess of 2,500 µg/m³: Activities involving lead containing coatings or paint on structures disturbed by abrasive blasting, welding, cutting, and torch burning.

d) During any of the above activities, provide appropriate respiratory protection, personal protective clothing and equipment, change areas and washing facilities, blood lead and zinc protoporphyrin monitoring, and employee training. Maintain the protection as specified above until the test results are received, then modify the protection measures as necessary.

e) If hexavalent chromium is present in the coating, provide personal protective equipment that prevents contact with the skin or eyes and washing facilities capable of removing chromium from the skin.

5. Collect and analyze all air samples according to the appropriate NIOSH method, or equivalent, for the metal of concern (e.g., Method 7082 for lead, Method 7048 for cadmium, Method 7600 for hexavalent chromium, and Method 7900 for inorganic arsenic). Note that monitoring for hexavalent chromium requires the use of a PVC filter. Only use laboratories that meet the qualification requirements established under Appendix A, and which have been approved by the Engineer.

6. Conduct periodic monitoring of Contractor workers and NYCDOT Agents and provide written employee notifications within five days of receipt of results in strict accordance with the applicable OSHA standard for the metal of concern (e.g., 29 CFR 1926.62 for lead). At a minimum, this requires monitoring at project start up, and after any changes in work
practices are made which could have an effect on airborne exposures. If there is no OSHA standard for the detected metal, conduct the monitoring and employee notification based on the requirements of OSHA 29 CFR 1926.62. Provide the Engineer with the results of any subsequent employee monitoring in the monthly IH report.

7. Maintain an accurate record of all air monitoring. The record should include at least the following information, date of sampling; operation that is being monitored; number, duration and results of samples taken; type of personal protective equipment; name, identification number, and job classification of employees represented by the monitoring.

E. Action Level

1. The Action Level for lead is 30 µg/m³ as an eight (8) hour Time Weighted Average (TWA), the Action Level for cadmium is 2.5 µg/m³ as an 8 hour TWA, the Action Level for hexavalent chromium is 2.5 µg/m³ as an 8 hour TWA, and the Action Level for inorganic arsenic is 5 µg/m³ as an 8 hour TWA. For other metals that are found in the coating, and for which no Action Level exists, establish the Action Level at 1/2 of the PEL. If a PEL does not exist, establish the Action Level at 1/2 of the Threshold Limit Value (TLV) found in Appendix A of 29 CFR 1926.55 (e.g., if the TLV is 5 µg/m³, establish the Action Level at 2.5µg/m³).

2. If airborne exposures to toxic metals are detected, but are below the Action Level, provide the worker training required by the OSHA standard for the respective metal, and hand wash facilities.

3. If airborne exposures to toxic metals are at or above the Action Level, invoke the following protective measures, as required by the OSHA standard for the respective metal:

   a) Written Worker Protection Plan
   b) Exposure Monitoring
   c) Housekeeping
   d) Employee Medical Surveillance and Medical Removal Protection
   e) Employee Information and Training
   f) Signs and Regulated Areas
   g) Recordkeeping
F. Permissible Exposure Limit (PEL) and Threshold Limit Value (TLV)

1. The PEL for airborne lead exposure is 50 µg/m³ as an 8 hour TWA. The PEL for cadmium is 5 µg/m³ as an 8 hour TWA, the PEL for hexavalent chromium is 5 µg/m³ as an 8 hour TWA, and the PEL for inorganic arsenic is 10 µg/m³ as an 8 hour TWA. The PEL/TLVs for other metals can be found in 29 CFR 1926.55.

2. In the event that extended work shifts are allowed, use the following formula to adjust the PEL: Adjusted PEL = 8 hr. PEL x (8 ÷ hours worked in a day).

3. In addition to complying with the requirements identified when exceeding the Action Level, invoke the following protective measures when the airborne exposure to a toxic metal found in the coating exceeds the PEL or TLV:

   a) Engineering and Work Practice Controls
   b) Respiratory Protection
   c) Protective Clothing and Equipment
   d) Hygiene Facilities and Practices

G. Respiratory Protection

1. After feasible engineering controls and work practices have been implemented, use respiratory protection if necessary to maintain employees' exposures to lead and other toxic metals below the PEL or TLV. Require the use of respirators for all employees, inspectors, observers, or other personnel who enter areas where airborne exposures exceed or are expected to exceed the PEL or TLV, or when entering regulated areas.

2. Develop a written Respiratory Protection Program in compliance with 29 CFR 1910.134 including commitments to provide the necessary medical examinations. When lead is present, include the provisions of 29 CFR 1926.62 in the program. When cadmium is present, include 29 CFR 1926.1127. When hexavalent chromium is present, include 29 CFR 1926.1126. When inorganic arsenic is present, include 29 CFR 1926.1118. Address the selection, use, maintenance and inspection of respirators, and qualifications for respirator users.

3. Treat used respirator cartridges as hazardous waste.
H. Protective Clothing and Equipment

1. Provide protective clothing and equipment and ensure they are worn by all employees during the initial assessment and for any employee whose exposures exceed the PEL or TLV.

2. When hexavalent chromium is present in the coating, provide protective clothing for the skin and eyes regardless of the airborne exposures.

3. Do not allow workers to wear street clothing beneath protective clothing in any areas where exposures to toxic metals exceed the PEL or TLV. This includes personal shoes unless they are fully protected by shoe covers, or left on the job site until thoroughly decontaminated.

4. Clean or replace the protective clothing as required by the appropriate OSHA standard for the toxic metal that is present. In the case of lead, clean or replace the clothing weekly if the airborne exposure levels are less than 200 µg/m³ as an 8 hour TWA, or daily if the exposure levels are greater than or equal to 200 µg/m³. In the case of inorganic arsenic, the threshold for daily versus weekly cleaning is 100 µg/m³. In the case of hexavalent chromium, clean, launder, repair and replace all protective clothing and equipment as needed to maintain its effectiveness. Do not use disposable clothing for any longer than one day, and replace the clothing more frequently if it becomes torn or damaged.

5. Do not remove or clean the clothing by any means that reintroduces the toxic metals into the ambient air, or onto an employee’s body, such as brushing, shaking, or blowing. Use HEPA vacuums for employee cleaning prior to removing protective clothing.

6. Store the used clothing in labeled, sealed containers.

   a) If the clothing is to be laundered and it has been exposed to lead, label the containers with the following: “CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.” If the clothing has been exposed to cadmium, chromium, inorganic arsenic, or other metals, modify the above text accordingly, as the precautions they take may vary according to the metal (e.g., skin and eye contact should be avoided if hexavalent chromium is present).

   b) If the clothing is disposable, label the containers as clothing contaminated with lead and other toxic metals, if applicable.
Declare the waste as hazardous, or test the waste and apply hazardous waste labels as appropriate based on the results.

7. If the clothing is washed on site, provide containers for the collection and retention of the water after filtration. Comply with the specific testing and disposal requirements in Section 3.05.J.

I. **Housekeeping** – Conduct housekeeping and project clean up as specified in section 3.06. The project site, including but not limited to, staging areas, work site, regulated areas and project boundaries, must be properly maintained and free of rubbish and trash throughout the duration of the project.

J. **Personal Hygiene Facilities and Equipment**

1. Provide clean lavatory and hand washing facilities in accordance with OSHA sanitation standard 29 CFR 1926.51. Locate the hand washing facilities outside of the regulated area, but in close proximity to the paint removal operation, in an area that is convenient for washing prior to eating or smoking.

2. Provide showers when exposures exceed the PEL or TLV. Confirm that all employees whose exposures exceed the PEL or TLV shower, including hair, prior to leaving the project site. Clean the decontamination facilities daily during use.

3. Filter and containerize all hygiene water. Comply with the specific testing and disposal requirements in Section 3.05.J.

4. Prohibit eating, drinking, smoking, chewing of food or tobacco products, or the application of cosmetics any time that hexavalent chromium is present, in any area where the exposure to any toxic metal exceeds the PEL or TLV, or within regulated areas. Confirm that workers thoroughly wash hands and face prior to undertaking any of these activities.

5. Provide clean lunch and break areas for use by all employees, and maintain airborne concentrations in these areas below the Action Levels.

6. Provide clean change area(s) for employees whose exposures exceed the PEL or TLV. Equip the change area(s) with separate storage facilities for street clothing that are adequately segregated to prevent cross-contamination from work clothing. Assure that employees do not leave the project site wearing any clothing that was worn while performing activities where exposures exceeded the PEL or TLV.

K. **Medical Surveillance and Medical Removal Protection**
1. Provide all employees with initial and periodic medical surveillance as required by the published OSHA health and safety standards for the metal of concern, except that the frequency of blood testing in the case of lead is increased. Conduct blood lead and zinc protoporphyrin (ZPP) sampling and analysis prior to exposure to lead and at monthly intervals thereafter. In addition, conduct exit blood tests for each worker within five working days upon completion of his/her Project activities that involve exposure to lead. Conduct the exit tests even if the departure of the employee occurs prior to the completion of the Contractor’s work on the project, and at any time that project activities involving lead exposure will be halted for 30 days or more (e.g., winter shut down).

2. Verify that all medical tests are completed by, or conducted under the supervision of, a physician or other licensed health care professional (PLHCP). Verify that the blood analysis is conducted by laboratories which meet the qualification requirements established in Appendix A, and which have been accepted by the Engineer. Provide the specialized medical surveillance and X-rays required by 29 CFR 1926.1118 for employees exposed to inorganic arsenic.

3. Workers with initial blood lead levels of 40 micrograms per deciliter (µg/dl) are not permitted on the project for any work activities involving exposure to lead.

4. Provide for intervention by the IH if a blood lead level >25 µg/dl occurs for two or more workers, or there is an increase of 10 µg/dl or more between consecutive tests for any individual worker. Intervention consists of an on-site investigation by the IH, implementation of corrective action, and notification of the Engineer in the following monthly report.

5. Provide for the temporary removal of employees from exposures above the Action Level for the metal of concern when the blood analysis indicates that unacceptable results are occurring (e.g., 50 µg/dl or above in the case of blood lead). Protect employees' benefits during any period of medical removal and conduct all tests required by the OSHA standard for the metal of concern during the removal period. In the case of lead, return workers to exposures above the PEL only after two consecutive blood tests are below 40µg/dl.

6. Provide all physical examinations as required by the appropriate OSHA standards for the metal(s) of concern. Include an evaluation and certification that the workers are medically fit to wear respirators. Verify that all examinations are performed by or under the direct supervision of a licensed physician.
7. When hexavalent chromium is present, provide medical examinations initially (within 30 days of initial assignment) and annually thereafter. Verify that the content of the medical examination meets the requirements of 29 CFR 1926.1126(i).

8. Provide all exam information and test results to the employees in writing within five days of receipt. Provide the Engineer with a letter report within 10 calendar days after the completion of each month signed by the IH that summarizes all examination and biological monitoring results.

9. For employees who are offered an examination and biological monitoring but choose not to participate or fail to respond, the Contractor shall provide documentation that the examination and monitoring were offered. This shall be in the form of a written declination signed by the employee or, for employees who are no longer on the payroll, a registered letter to the employee’s last known address.

L. Employee Training and Information

1. Provide initial and annual refresher training for all employees who will be exposed to toxic metals above the respective Action Levels on any one day in a 12-month period. Include all of the elements of training that are required by the appropriate OSHA standard. If a standard for the metal does not exist, use the training requirements of 29 CFR 1926.62 as the basis of the training program highlighting the differences as appropriate for the other metals of concern.

2. When other contractors or employers are present at the site, notify them of the nature of the hazards of the work such as lead, noise, and solvent vapors. Advise them of the need to remain out of exposure areas, the warning signs and labeling system in effect, and the potential need for them to take measures to protect their employees in accordance with the applicable OSHA regulations.

M. Signs – As specified in section 3.02, post warning signs around areas or activities that might generate airborne emissions of toxic metals in excess of the Action Levels.

N. Parking Areas - Provide a parking area for employee cars where they will not be contaminated with lead or other toxic metals. Relocate the parking area as necessary throughout the course of the project. Have the competent person confirm the suitability of the parking areas on a routine basis. Worker vehicles are not permitted in the regulated areas or within 100 feet of the containment enclosures.
O. Recordkeeping

1. Retain all records related to training, medical examinations, blood analysis, exposure monitoring, respirator fit testing, inspections by a competent person, and other related project documentation on file at the project site.

2. Provide the Engineer with letter reports signed by the IH which summarize all examination results that are indicative of worker exposures to (or which demonstrate proper protection from) toxic metals. In the case of lead, summarize the blood lead and ZPP results, indicate any observed trends, and identify worker intervention or removal provisions that were invoked based on the results. Provide summary reports of the test results prior to worker exposures to Project activities, periodic surveillance results, and results upon completion of site activities. Provide the Engineer with an original signed copy of each report within 10 calendar days after the end of each month.

3. Retain all records for the duration of employment plus 30 years.

3.02 ESTABLISHMENT OF REGULATED AREAS

A. Establish zones (regulated areas) around project locations or activities that might generate airborne emissions of lead, cadmium, chromium, inorganic arsenic, or other toxic metal in excess of the Action Level (e.g., paint removal and clean-up locations, dust collector staging areas, waste storage areas, etc.).

B. Use ropes, ribbons, tape, or other visible means to define the areas. Prohibit entrance into the regulated areas by unprotected or untrained personnel to ensure that they are not exposed to toxic metals from project activities.

C. Unless objective data is available for establishing the regulated areas, and the data is provided in writing, signed by the Contractor’s IH, and is accepted by the Engineer, conduct instrument monitoring in accordance with PD/Lead Method A3 of SSPC 95-06, to verify the adequacy of the regulated areas. Use a minimum of two low flow pumps at each regulated area location (e.g., one pump upwind and one pump downwind). Unless otherwise directed by the Engineer, until the monitoring results are available to establish the perimeter of the regulated area, initially establish the boundary a minimum of 15 feet away from any equipment or operations that might generate airborne emissions of toxic metals.

D. Conduct the monitoring according to NIOSH Method 7082, or equivalent method for the other metals of concern, at the pre-established boundaries of the regulated area(s). Collect the samples throughout an entire work shift upon full commencement of the paint removal activities (at project-start-up).
E. If the monitoring confirms that project emissions at the established boundary do not exceed the Action Level as an eight hour TWA, establish the boundary at that location and discontinue monitoring.

F. If the monitoring shows that the emissions exceed the Action Level, modify and improve work practices and containment to provide better controls over the emissions, or reestablish the boundary at a different location if allowed by the Engineer. Repeat the monitoring in either case.

G. After the boundaries have been established through instrument monitoring, additional monitoring is not required unless directed by the Engineer or environmental consultant if suspect visible emissions occur, or there are changes to the work practices or equipment being used within the regulated areas. In these cases, conduct additional monitoring to confirm the adequacy of the control systems in place, and to verify the suitability of the existing boundary of the regulated area(s).

H. Verify that the exposure cassettes are only analyzed by laboratories which meet the qualification requirements established under Appendix A, and which have been approved by the Engineer. The laboratory must provide the results to the Contractor within three days of the field sampling. Provide the test results to the Engineer verbally within one day of receipt, and in writing within five working days thereafter.

I. Post caution signs at the entryways around each regulated area. If there is no regulation for the metal of concern, use the legend for the CAUTION sign as found in 29 CFR 1926.62 as the basis, and insert the name(s) of the other toxic metals. Sign requirements for lead, cadmium, and inorganic arsenic are as follows:

```
WARNING
LEAD WORK AREA
POISON
NO EATING OR SMOKING

DANGER, CADMIUM
CANCER HAZARD,
CAN CAUSE LUNG AND KIDNEY DISEASE,
AUTHORIZED PERSONNEL ONLY,
RESPIRATORS REQUIRED IN THIS AREA

DANGER
INORGANIC ARSENIC
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
NO SMOKING OR EATING
```
RESPIRATOR REQUIRED

J. Use signs that are a minimum of 8 1/2 inches by 11 inches in size with black block lettering on a white, yellow, or orange background. Do not use caution ribbons as a substitute for signs.

K. Verify that all workers who enter the regulated area have had the proper training, blood analysis and medical examinations, and are wearing the required protective clothing and equipment. Prohibit eating, drinking, smoking, and chewing of food or tobacco products in any area where the exposures exceed the Action Level or where hexavalent chromium may be present.

3.03 CONTROL AND MONITORING OF RELEASES TO AIR, SOIL AND WATER

A. General

1. Conduct all activities so that spills or releases to the soil, water, sediment, or sewers do not occur. Comply with all applicable federal, state and local regulations for the protection of soils, groundwater and surface waters.

2. Have the competent person inspect the Work site on a daily basis for compliance with the requirements of this Section and the approved Environmental Protection Plan, and prepare a daily report or daily log of observations made. Maintain the information at the project site and make it available to the Engineer or environmental consultant for review at any time.

3. Initiate immediate corrective action, including the replacement of materials or equipment, or adjustments to work activities as necessary, to correct unacceptable emissions or releases. All equipment and vehicles must be repaired or replaced to prevent leaks to the environment.

4. Spill prevention and control measures must be implemented for vehicles and equipment that utilize diesel fuel, gasoline or other petroleum products. Any spills of petroleum products to the environment must be reported to the NYSDEC Spill Hotline: 1-800-457-7362 and the National Response Center. Any spills to a storm drain, sewer system, wetland, body of water or waterway must also be reported to the US Coast Guard.

B. Visible Emissions and Releases

1. Clean the work area of all visible pre-existing construction material, rubbish, garbage and paint removal debris (i.e. spent abrasive, rust, paint chips, etc.) prior to installing the containment over any land mass. Areas to be cleaned include NYCDOT’s right-of-way and adjacent areas as directed by the Engineer. The presence of new paint chips or surface
preparation debris in these areas will be cause to examine the containment and work practices, and to correct all observed deficiencies. Upon completion of the project verify that the same locations and all staging areas are free of construction and paint removal debris.

2. Install water booms beneath and around the work area as appropriate and/or use boats with skimmers to control and collect unanticipated escapes of debris (see 3.04 J).

3. Have the competent person conduct observations of visible emissions and releases on an ongoing daily basis when dust-producing activities are underway, such as paint removal, clean up, waste handling, and containment dismantling or relocation. Conduct these assessments in accordance with PD/Lead Method A4 of SSPC 95-06 and SSPC-TU7. These assessments are in addition to those performed by the environmental consultant.

4. Visible emissions in excess of SSPC Guide 6, Level 1 are unacceptable. This involves emissions of a cumulative duration of greater than 1 percent of the workday, or greater than 36 seconds in an hour, or 9 seconds in any 15 minutes.

5. Releases or spills of dust and debris that have become deposited on surrounding property, structures, equipment or vehicles, and bodies of water are unacceptable. If unacceptable visible emissions or releases are observed, whether by the Contractor, Engineer and/or the environmental consultant:

   a) Immediately shut down the emission-producing operations and clean up visible deposits of debris on the unprotected ground, on the soil, in the water, around storm sewers or drains, or in areas where rain water could carry the debris into storm sewers or drains. Pick up debris by hand and by HEPA vacuuming.

   b) Change work practices, modify the containment, or take other appropriate corrective action as needed and as agreed upon by the environmental consultant, to prevent similar releases from occurring in the future.

   c) Do not resume the emission-producing operations until the Engineer or environmental consultant has given permission to resume these operations.

6. In the event of a conflict between observations between the environmental consultant and the Contractor, the findings of the environmental consultant shall prevail.
consultant shall prevail.

7. Maintain written documentation of the results of the observations in a log book or other report form available to the Engineer or environmental consultant for review. Verbally report problems to the Engineer or environmental consultant on the same day they are observed.

C. **High Volume Ambient Air Monitoring**

1. The environmental consultant, on behalf of the Engineer, will utilize the high volume ambient air monitoring equipment provided by the Contractor. The purpose of the consultant monitoring is to confirm that unacceptable TSP-lead emissions are not generated during paint removal, containment cleaning operations, containment dismantling and other emission-producing activities that involve the disturbance of paint and lead-paint debris/wastes/dust. A minimum of four TSP high volume air monitors are required for each containment.

2. Do not conduct any work involving the disturbance or clean up of lead paint debris or move the containment unless the monitors are in place and operating.

3. Position the monitors at the locations and times as designated by the environmental consultant:
   
a) Monitor sitting will take into consideration the proximity of homes, businesses, and the general surrounding environment. The locations are likely to change as the work progresses across the bridge.

b) Move and set up the equipment to the designated locations. Put all monitors into position at the designated locations and ensure that they are fully operational at least 30 minutes before the commencement of dust producing operations in order to allow enough time for the environmental consultant to install filters and make any necessary adjustments to the equipment.

c) Allow the monitors to remain operational for a minimum of 30 minutes after the completion of daily operations.

4. At the completion of each day’s monitoring activities pick-up, transport and store monitors and associated equipment for the next use. If the monitors are to remain in position, provide for the necessary level of security.
5. Initiate the following action based on the TSP-lead results:
   
a) The background concentration for NYCDOT projects is established at 0.1μg/m³.

b) If TSP-lead levels, measured over 8 hours, are greater than 4.5μg/m³ minus 2 times the background concentration of 0.1μg/m³ on one day of dust-producing operations, assess all field operations undertaken on that day and initiate appropriate corrective action.

c) If TSP-lead levels, measured over 8 hours, are greater than 4.5μg/m³ minus 2 times the background concentration of 0.1μg/m³ at the same location on two days of dust-producing operations, suspend all dust-producing operations pending a full assessment and corrective action.

d) If the results of the monitoring are unacceptable, undertake the necessary corrective action within 24 hours of receipt of the results. Corrective action may include modifications to the paint removal or containment systems and work practices. Do not resume the emission-producing operations until the Engineer or environmental consultant has given permission to resume these operations.

D. Real Time Particulate Monitoring

1. The environmental consultant will conduct real time monitoring around the containment (e.g., seams and entryways) each day using a real-time aerosol monitor such as a Data Ram or hand-held Mini Ram. The monitoring is being conducted to evaluate the containment seams and entryways for particulate emissions that represent instantaneous increases over background of three times or more. Background values will be established by taking readings in the same or similar locations while no operations are underway.

2. If unacceptable particulate releases are reported by the environmental consultant, in addition to cleaning the debris, change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future. Do not resume the emission-producing operations until the Engineer or environmental consultant has given permission to resume these operations.

E. Sensitive Natural Resources

1. Sensitive natural resource areas may be located around the project. A sensitive natural resource includes any area capable of providing habitat
for plant and animal species or capable of functioning to support environmental systems and maintain the City’s environmental balance, such as bays, inlets, and wetlands. These areas also include all federal and state parkland, wetlands, tidal zones or other regulated natural areas.

2. If the project is located in a natural resource area, develop a site-specific habitat protection plan addressing the steps that will be taken to protect these ecologically sensitive areas from damage.

F. **Endangered Species and Species Protected by Federal Law**

1. Peregrine falcons (endangered), barn owls or red-tailed hawks (protected by Federal law) may be nesting on the bridge. Note that although these species may not be present on the bridge at the beginning of the project, they could show up at any time. If present, advise the Engineer and develop a site-specific plan for the acceptance by the Engineer, for the sequencing of paint removal operations to avoid disturbing nesting pairs.

2. Federal and State law permits peregrine falcon nests to be moved if the young have already fledged. Before moving any unoccupied nests, advise the Engineer and obtain a Federal United States Fish & Wildlife Service (USF&WS) permit and a NYSDEC depredation permit.

3. Barn owl and red-tailed hawk nests are generally occupied from the beginning of April until the end of July, with eggs laid in April. Peregrine falcon nests are generally occupied from March to July.

3.04 **CONTAINMENT**

A. **General**

1. Use a containment system that maintains the work area free of emissions of dust and debris in accordance with all provisions of this Specification.

2. Install and use a containment system for the project based on the paint removal methods that will be utilized.

3. Provide the containment system in compliance with SSPC Guide 6 guidelines and the requirements of this Specification as well as the FEIS.

4. The containment enclosure can not be partitioned to create smaller interior enclosures for performing the work. The entire containment is considered to be the active work area and the specified negative pressure and airflow must be maintained throughout the entire cross-section of the containment enclosure (airflow can not be directed or channeled within the containment enclosure by the use of barriers, partitions, baffle tarps, or
other devices).

5. Have the competent person inspect the performance of the containment on a daily basis for compliance with this Section and the approved containment submittals, and prepare a daily report or daily log of observations made. Maintain the information at the project site and make it available to the Engineer or environmental consultant for review at any time.

6. All materials utilized in containment construction shall be fire-retardant. All materials shall possess a fire rating in accordance with all applicable federal, local and state agency, as well as passing U.L and NFPA test standards. With the submittals, provide proof that the materials are fire retardant.

B. Noise

1. Comply with the New York City Noise Control Code for construction equipment.

2. If construction activities will be performed outside of normal hours of operation (7AM to 6PM on weekdays), obtain special permits authorizing this activity. Provide a copy of the permit to the Engineer prior to commencing any operations outside of normal hours.

3. See Section 831 for additional information on noise reduction.

C. Containment Drawings and Submittals

1. Provide containment drawings, calculations, and assumptions, including ventilation criteria as detailed in Appendix A, signed and sealed by a New York State licensed Professional Engineer. Do not conduct any work until the drawings, calculations, and containment submittals have been reviewed and accepted by the Engineer and the NYCDOT Environmental Engineering Unit.

2. The containment drawings must include calculations for pressure losses, dust collector capacity, make-up air openings and airflow.

3. Provide catalog cut sheets, fan curves and equipment operating parameters for the dust collectors and filters.

D. Certification of Containment Installation

1. After each unique containment is installed, have the New York State licensed Professional Engineer responsible for the containment design, or
a designee employed by the same firm and working under the direction of
the design engineer, conduct a site inspection to verify that the
containment system has been assembled as shown on the approved, signed
and sealed drawings. Have the design engineer submit a letter to the
Engineer attesting to the above. The Engineer must receive the letter
before any paint removal work within the containment can begin.

2. If the containment is not installed in accordance with the design drawings,
reinstall the containment, or issue supplemental calculations for the new
design for Engineer review and acceptance in accordance with the original
submittal requirements. Field changes will only be acceptable after
submission and acceptance of supplemental calculations or design
drawings.

E. Containment Flooring System and Additional Collectors

1. If the floor or ground beneath the structure being prepared serves as the
base of the containment:

   a) Cover it with air and dust impenetrable materials such as
tarpaulins.

   b) Prior to the installation of the containment floor, ensure that the
work area has been cleaned of all rubbish, garbage and debris and
properly disposed. Do not remove any trees, bushes or shrubs.

   c) As required, install a rigid material such as plywood over or under
the ground tarpaulin in order to prevent any rips, tears or other
penetrations from occurring in the ground tarpaulin. Maintain the
materials throughout the project to avoid loosening debris through
rips, tears, or breaks in the coverings.

2. If a suspended or elevated platform is constructed to serve as the base of
the containment:

   a) Cover rigid platform materials (e.g., plywood, metal, etc.) with
multiple layers of flexible materials as necessary to create an air
and dust impenetrable enclosure.

   b) Cover flexible platform materials, such as those composed of a
chain-link wire fencing with multiple layers of flexible materials to
create an air and dust impenetrable enclosure. The flexible
materials consist of a first layer of rubber-type membrane and a
second layer of tarpaulin-type material.
c) Seal all holes and gaps at cable, hanger, or vertical pick-up intersections with the platform.

d) Verify that the platform and its components are designed and constructed to support at least four times its maximum intended load without failure plus a safety factor, with wire cables capable of supporting at least six times their maximum intended load without failure plus a safety factor. Provide all load calculations for design of the suspended platform systems. Strictly follow all applicable OSHA regulations regarding scaffolding and fall protection systems.

e) Provide ground covers around and beneath the containment area to capture inadvertent spills or leaks of debris. Extend the covers a minimum of 10 feet beyond the area covered by the containment. Increase this distance based on the height of the work above the ground as directed by the Engineer. Remove debris from the covers continuously and at the end of a work shift, or as directed by the Engineer.

3. Note the requirements in 3.06 C for the daily cleaning of the floor and for overall cleaning of the containment prior to moving or dismantling the enclosure.

F. **Containment Requirements for Removal Methods** – The minimum containment system requirements for the various method(s) of paint removal as follows:

1. Dry Abrasive Blast Cleaning – Class 1A
2. Vacuum Blast Cleaning – Class 4A
3. Wet Abrasive Blast Cleaning – Class 1W
4. Water Jetting – Class 2W
5. Power Tool Cleaning without Vacuum Shrouds – Class 1P
6. Power Tool Cleaning with Vacuum Shrouds – Class 3P
7. Hand Tool Cleaning – Class 3P
8. Chemical Stripping with Hand Removal – Class 3C
9. Chemical Stripping with Wet Removal – Class 2C
G. **Containment and Ventilation System Components** – The basic components that make up containment systems are defined below. The components are combined in Table 1 and in accordance with the requirements of SSPC Guide 6 to establish the requirements for each method of removal.

1. **Rigidity of Containment Materials**: Rigid containment materials consist of solid panels of plywood, aluminum, rigid metal, plastic, fiberglass, composites, or similar materials. Flexible materials consist of screens, tarps, drapes, plastic sheeting, or similar materials. Containment materials must be fire retardant, and new and unused when delivered to the project site. Maintain stored materials in a new condition until used in containment construction. Containment materials that become torn, ripped, or otherwise damaged during use, or show evidence of wear that may affect their ability to control emissions shall not be used for the construction of containment enclosures or in any other manner on the project.

2. **Permeability of Containment Materials**: The containment materials are identified as air impenetrable if they are impervious to dust or wind such as provided by rigid panels, coated solid tarps, or plastic sheeting. Air penetrable materials are those that are formed or woven to allow air flow. Water impermeable materials are those that are capable of containing and controlling water when wet methods of preparation are used. Chemical resistant materials are those resistant to the specific chemical and solvent stripping solutions.

3. **Support Structure**: Rigid support structures consist of scaffolding and framing to which the containment materials are affixed to minimize movement of the containment cocoon. Flexible support structures are comprised of cables, chains, or similar systems to which the containment materials are affixed. Minimal support structures involve the cables or connections necessary to attach the material to the structure being prepared and/or to the ground.

4. **Containment Joints**: Fully sealed joints require that mating surfaces between the containment materials and the structure being prepared are completely sealed. Sealing measures include tape, caulk, Velcro, clamps, or other similar material capable of forming a continuous, impenetrable or impermeable seal. Partially sealed joints involve the mating of the materials to one another and to the structure being prepared with concern for the structural soundness of the joint, but without consideration for creating a continuous, impenetrable or impermeable seal.

5. **Entryway**: An airlock entryway involves a minimum of one stage that is fully sealed to the containment and which is maintained under negative pressure using the ventilation system of the containment. Resealable door entryways involve the use of flexible or rigid doors capable of being
repeatedly opened and resealed. Sealing methods include the use of zippers, Velcro, clamps, or similar fasteners. The use of clamps to create “resealable doors” is not permitted. Overlapping door tarpaulin entryways consist of two or three overlapping door tarpaulins. Open seam entryways involve entrance into the containment through any open seam.

6. **Mechanical Ventilation**: The requirement for mechanical ventilation is to ensure that adequate air movement is achieved to reduce worker exposure to toxic metals to as low as feasible, and to enhance visibility. Design the system with proper exhaust ports or plenums, adequately sized ductwork, adequately sized discharge fans and air cleaning devices (dust collectors) and properly sized and distributed make-up air points. A minimum cross-draft airflow of 100 feet per minute (30.48 meters/min) or a down-draft airflow of 60 feet per minute (18.29 meters/minute) are required during all activities that disturb lead paint or debris within the containment. These activities include, but are not limited to, abrasive blasting, blow down, waste removal, cleaning of the containment and cleaning of surfaces in the containment. Increase these minimum airflows as required if unacceptable visibility or worker exposures to lead or other toxic metals occur. Verify through instrument monitoring that air flows meet or exceed design values initially and at least weekly thereafter. Document air flow measurements.

Natural ventilation does not require the use of mechanical equipment for moving dust and debris through the work area. It relies on natural air flow patterns, if any, through the containment.

7. **Negative Pressure**: If negative pressure is specified, verify its performance through instrument monitoring to achieve a minimum of 0.03 in. (0.08 cm) water column (W.C.) relative to ambient conditions during all activities that disturb lead paint, debris, grit or other lead-contaminated materials. This shall include, but not be limited to, abrasive blasting, containment cleaning, vacuuming, and blowdown within containment. In addition verify through visual assessments for the concave appearance of the containment enclosure.

8. **Exhaust Ventilation**: When mechanical ventilation systems are used, provide filtration of the exhaust air, otherwise airborne particulate from the containment will be exhausted directly into the surrounding air. Provide a filter that is at least 99.9% efficient in removing a monodispersed aerosol at 0.5 micrometers in diameter. For other requirements related to exhaust ventilation design and use requirements, see SSPC-Guide 16 and Item 6, Mechanical Ventilation and Item 7, Negative Pressure, described above.

H. **Maintenance of Existing Lighting Systems and Containment Lighting Requirements**
1. Maintain as fully operational throughout the project, all existing navigation and anti-collision lighting systems that are attached to the structure. If existing lighting will be concealed, install temporary lighting. Provide the lighting plan to the Engineer for approval in advance.

2. Make all efforts to maintain existing aerial, roadway, and parking lot lighting, or provide suitable substitutions as approved by the Engineer.

3. In accordance with SSPC-Guide 12, maintain light intensity inside containment, by natural or artificial means, at a minimum of 20 foot-candles (215 lux) on the surface throughout surface preparation and painting activities. Maintain a minimum of 50 foot-candles (538 lux) at the surface for inspection activities. Provide auxiliary lighting as necessary. Use explosion-proof lighting.

4. Increase lighting intensity when measurements by any involved party indicate that there is insufficient lighting for either surface preparation, painting, or inspection.

5. Comply with the lockout/tagout provisions of the following section.

I. Lockout/Tagout of Existing Electrical Systems

1. De-energize and lockout/tagout existing electrical systems located inside containment enclosures and in other work areas as appropriate.

2. The Contractor is responsible for performing all lockout/tagout in accordance with 29 CFR 1910.147 and 1910.333.

3. Coordinate all lockout/tagout activities with NYCDOT and the utilities.

J. Protection of Drainage Systems

1. Protect storm sewers and drains from the entrance of debris from project activities. Keep all protective systems clean and operational throughout the entire project. At the end of each shift, remove all visible debris from the protective devices or from areas where rain water could carry the debris into drains or storm sewers. Conduct more frequent cleaning as directed by the Engineer.

2. Identify the methods that will be used to route run-off from the existing deck drains through the containment enclosure. Do not close any bridge deck drains without the explicit approval of the Engineer.

K. Work Over Water - Containment Restrictions
1. When working over or near water, install a shield, suspended platform or other engineering control to prevent discharge of any debris or materials into the waterway. Use water booms to contain inadvertent spills or releases of dust and debris unless prohibited by navigation lanes. In these cases, have a boat available with a skimmer to collect fugitive materials. Remove all project-related dust and debris from the surface of the water or from sediment at the end of each shift at a minimum. Conduct more frequent cleaning, if directed by the Engineer.

2. Provide the Engineer and the appropriate authorities (e.g., Coast Guard) with the distance that the containment will extend below the bottom of the bridge (e.g., below the bottom chord) when operating in the navigation channel. Maintain this distance to the minimum required and approved.

3. Unless otherwise directed by the Engineer or the appropriate authorities, design the containment to allow it to be moved out of the navigation channel within 24 hours of notification that ships needing additional clearance require passage.

4. Provide the Engineer and the appropriate authorities with a 24 hour telephone number and contacts for discussions regarding the containment system.

L. Inclement Weather

1. When threatening weather conditions exist or are forecast for the New York City Metropolitan Area, such as sustained winds or gusts of 30 mph (48 kilometers/hour) or more that could cause the release of waste material to the surrounding environment, stop all work activities and immediately clean up waste materials within the containment. The work area and project site must be secured of all loose materials and equipment.

2. Develop and submit to the Engineer for acceptance, an Emergency Demobilization Procedure for the securing of equipment and materials, and the removal of necessary containment materials in the event of, or the forecast of, inclement weather for the New York City Metropolitan Area. Inclement weather includes, but is not limited to, sustained wind speeds or gusts of 40 mph (64 kilometers/hour) or greater and heavy snow storms that will place unacceptable loads on the containment structure. Initiate the Emergency Demobilization Procedure under, or the forecast of, inclement weather conditions or as directed by the Engineer.

3.05 Waste Classification, Handling, and Disposal

A. General
1. The Contractor and the NYCDOT are co-generators of the hazardous waste. The NYCDOT will provide the EPA identification number, but the Contractor is solely responsible for the aspects of waste management as defined in this Section.

2. Work under this Section consists of accumulating, packaging, labeling, loading, transporting, treating, and disposing of hazardous paint removal waste, non-hazardous construction debris, and waste water used for cleaning and washing the bridge and equipment prior to removal from the Work site.

3. For purposes of this Section, paint removal waste is defined as removed paint particles combined with the material used to remove the paint. This also includes abrasive grit material, recyclable or otherwise. The NYCDOT has declared all paint removal waste as hazardous, even if sampling and analysis indicate that hazardous thresholds are not exceeded. Note that the existing coatings may contain toxic metals in addition to lead.

4. Recover all waste products generated during cleaning and painting work, including but not limited to rags, tape, and paint cans. Manage as non-hazardous/construction waste as described in 3.05 J, unless the items are soaked with paint and thinners. If the items are soaked with paint and thinners, handle them as a flammable hazardous waste.

5. Have the competent person inspect the waste handling and storage areas on a daily basis for compliance with this Section and the approved Waste Management Plan and prepare a daily report or daily log of observations made. Maintain the information at the project site and make it available to the Engineer or environmental consultant for review at any time.

B. **Items Provided by the Contractor**

1. Waste sampling, testing, and classification.

2. Waste packaging, handling, and secure storage.

3. Labeling of containers.

4. Procuring all necessary waste permits and licenses.

5. Arranging for the transportation and disposal of hazardous waste.

6. Arranging for the transportation and disposal of non-hazardous waste.
C. Waste Sampling

1. All paint removal waste streams are declared hazardous, but collect a minimum of four representative samples of each paint removal waste stream to identify the specific composition.

2. Collect a minimum of ½ pound of waste per sample, or approximately 8 oz per sample in the case of wastewater. Collect the wastewater sample only after the water has been filtered as specified later in this Section.

3. Collect the samples under the observation of the environmental consultant.

4. Collect the samples in accordance with EPA solid waste test methods SW-846, "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods." Use a random sampling technique to collect representative samples.

5. Complete the initial sampling of each waste stream immediately upon filling the first container, but do not allow waste to accumulate for longer than 30 days before sampling. After the representative samples are collected, send them immediately to the approved and NYS accredited laboratory for analysis.

6. Unless otherwise directed by the Engineer, or required by State regulations or the waste recycling or disposal facility, once each waste stream is sampled, tested, and classified, additional sampling and analysis are not required for subsequent shipments unless the waste stream changes.

E. Waste Testing

1. Only use laboratories which meet the qualification requirements of Appendix A, and which have been approved by the Engineer.

2. Direct the laboratory to test the solid waste in accordance with 40 CFR 261, Appendix II, Method 1311 Toxicity Characteristic Leaching Procedure (TCLP).

3. Analyze one sample from each waste stream by TCLP for all eight (8) metals, and other hazardous characteristics (e.g., corrosivity, reactivity, and ignitability) as required by the regulations. Conduct any additional tests required by the disposal facility. When chemical strippers are used, test all liquids and sludge. Include pH to determine corrosivity. Test chemical waste products for ignitability.

4. Retain the other samples for possible further analysis.
5. After filtration, test the wastewater for lead and any other analytical parameters required for disposal characterization by the POTW or disposal facility. Comply with disposal requirements in 3.05 K.

F. Waste Classification

1. Hazardous Waste Classification

   a) All paint removal waste streams are classified as hazardous. Other waste streams are classified as hazardous if results from TCLP analysis indicate any one of the following eight metals in concentrations at or above limits established in 40 CFR 261:

   - Arsenic - 5.0 mg/L
   - Barium - 100.0 mg/L
   - Cadmium - 1.0 mg/L
   - Chromium - 5.0 mg/L
   - Lead - 5.0 mg/L
   - Mercury - 0.2 mg/L
   - Selenium - 1.0 mg/L
   - Silver - 5.0 mg/L

   b) The above list includes only those elements typically associated with paints. Take into account and test for other substances that may be present which can cause debris to be classified as hazardous waste as defined in 40 CFR 261 (e.g., pH \( \leq 2.0 \) or \( \geq 12.5 \) resulting in corrosivity, or the characteristics of reactivity or ignitability).

   c) The NYCDOT requires that paint removal waste, including waste that is generated through the use of steel abrasives and the steel abrasives, be handled, transported, and disposed of as hazardous waste, regardless of the TCLP test results.

   d) Typical paint removal 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 wastes in excess of 2% organic content. Waste contaminated in this manner (e.g., with solvent waste) 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.

2. Non-hazardous Waste Classification
a) A waste stream is classified as non-hazardous if the TCLP analysis indicates that the waste stream contains toxic metals or hazardous substances below the thresholds identified above which would classify it as hazardous, and it does not exhibit other characteristics of hazardous wastes.

b) The NYCDOT has classified paint removal waste as hazardous regardless of the test results.

3. Laboratory Report

a) Have the laboratory send the original test report directly to the Engineer no later than five (5) calendar days after the representative samples are submitted for testing, with a copy being sent by facsimile to the Engineer on the same day the original report is sent.

b) Include the following minimum information in each report: Identity of the waste stream(s) analyzed, the number of samples collected and tested, dates of sampling and testing, laboratory test procedures utilized, the names and signatures of the individuals collecting the samples and conducting the laboratory tests, an interpretation of the test results, and chain-of-custody forms.

G. Waste Handling, Site Transportation and Spill Containment

1. Comply with 40 CFR 262, State and City regulations for the on-site handling, packaging, and storage of all waste generated by the project.

2. Sequence the waste collection operations and identify storage locations in order to minimize the amount of container movement required throughout the course of the project. The Engineer must approve all waste storage locations. All hazardous waste must be stored on NYCDOT bridge property.

3. Provide secure waste storage areas (e.g., within a separate locked fenced-in area or other secure enclosure) to prevent access by the public or vandals, and placard the storage area in accordance with applicable regulations. Store the waste on a level surface. Any fencing used for the storage area must be a minimum of eight feet high.

4. Do not place hazardous waste on the unprotected ground (e.g., cover the ground with impermeable tarpaulins) and provide protection from the elements (e.g., rain and snow) and adequate shielding to prevent dispersion of the waste by wind or rain. Use pallets to store drums in areas prone to flooding from rain. Store drums containing liquid wastes
(e.g., wastewater and spent solvents) on drip pads. Clean the drip pads on a periodic basis. Install secondary containment controls around all hazardous waste containers.

5. Store non-hazardous waste separately from hazardous waste. Do not co-mix hazardous waste with non-hazardous waste. Do not mix different types of hazardous waste together unless specifically approved by the Engineer and the disposal facility.

6. Arrange containers in the storage area for easy accessibility. Drums should be stored in rows of two with hazardous waste labels facing outward for inspection.

7. At the end of each working day at a minimum, collect and store the waste in drums or containers such that no waste is left exposed overnight. Cover all containers immediately upon filling and confirm that all lids are closed except when filling. Verify that all labels remain intact. Hazardous waste must be transported from the points of generation to the secure storage area within a closed vehicle (i.e. box truck). Transportation of hazardous waste via fork lift, pick-up truck, flat bed or other similar type vehicles is not permitted.

8. Maintain all containers in good operating condition with all lids and closing mechanisms intact and operational to prevent the escape of debris by wind, spilling of the contents, or access by unauthorized personnel. Drums must have lids and rings in place. Drums stationed at the dust collectors, recyclers or other equipment must have drum lids in place and connected to the discharge nozzles of the equipment through the flanged opening on the drum lid. All hazardous waste and debris from paint removal operations must be stored in rigid containers. The use of fabric or plastic-type bags to collect hazardous waste, non-characterized waste or other regulated waste is prohibited. The connecting of fabric or plastic bags to discharge nozzles of equipment is prohibited.

9. Provide adequate shielding and protection of the surrounding area when transferring and/or conveying hazardous waste from one container to another to prevent dispersion or spills. Hazardous waste can only be transferred within a regulated, controlled and contained area. Immediately clean up spilled debris and return it to the storage containers. Use methods such as HEPA vacuuming that will prevent airborne dispersion of the material.

10. Do not fill any container or roll-off in excess of the capacity marked on the container.

11. Have the competent person, on a daily basis, inspect the drums or
containers for corrosion, applicable and legible labels, proper covers, ground protection, and leaks, and record the results of all the inspections in a log book. Conduct additional inspections before containers are moved.

12. Verify that all waste is transported to the appropriate recycling or disposal facility within forty five (45) calendar days after waste is generated, or two weeks following demobilization of the site, whichever occurs first. Failure to comply with the aforementioned deadlines may result in the actions described under Basis of Payment.

13. Improper waste storage is cause for immediate suspension of the Work by the Engineer until appropriate corrective action is completed.

14. Train all personnel in the proper handling of hazardous waste at the Work site in accordance with 40 CFR 265.16 and 6 NYCRR 373. Include procedures in the Waste Handling Plan that will be followed in the event of a release or spill when handling the waste, including containment of the spill, notification of the NYCDOT Engineer, collection and containerizing of the waste, and a review of work practices and implementation of necessary changes to prevent a reoccurrence. Maintain all training records on-site. Workers responsible for handling hazardous wastes must have a current OSHA 24 hour HAZWOPER certification plus 8 hours of annual refresher training.

H. Labeling of Containers

1. Immediately label all containers of hazardous waste in accordance with 40 CFR 262, and 49 CFR 171-179. Complete missing information upon receipt of the testing results. Include the following minimum information:

   a) Hazardous Waste. Federal law prohibits improper disposal. If found, contact the nearest police, or public safety authority, or the U.S. Environmental Protection Agency.

   b) Proper DOT Shipping Name (e.g., RQ Hazardous Waste Solid, N.O.S. 9, NA 3077, PG III)

   c) Manifest Document No (when manifest is prepared; prior to shipping)

   d) Generator Name, Address, EPA ID No, and Contract No.

   e) Date of Accumulation (accumulation date commences when hazardous waste is first placed into the container)
f) EPA Waste No (e.g., Arsenic - D0004, Cadmium - D0006, Chromium - D0007, Lead - D008)

g) Apply DOT identification labels based on DOT hazard class in accordance with 49 CFR 172.

2. Enter the above information using permanent marking material, printed in English, and displayed on a background of contrasting color unobscured by other labels or attachments. Locate labeling away from other markings that could substantially reduce its effectiveness.

3. Complete the labeling, marking, and placarding activities under the observation of the environmental consultant prior to storing or transporting any container or rolloff.

I. Waste Transportation and Disposal

1. Hazardous Waste

a) Procure all necessary waste permits or licenses that are required by State or City regulations.

b) Prepare the Uniform Hazardous Waste Manifest for each shipment, including the LDR (Land Disposal Restriction) certification, which will be attached to the manifest. The Engineer will sign the Generator’s Certification on the manifest and maintain copies of the original manifest and signed copies upon completion of disposal.

c) Arrange for the transportation of all hazardous waste by a licensed transporter in accordance with 40 CFR 263, 49 CFR 171-179, and State and City regulations. Verify that all waste is completely covered during transport.

d) The hazardous waste transporter is not permitted to stop enroute after the pick up of hazardous materials from the construction site.

e) Arrange for the recycling or disposal of all hazardous waste in accordance with 40 CFR 264, 40 CFR 268, and state regulations. Verify that only licensed recycling or Treatment, Storage, and Disposal (TSD) facilities are used.

f) Should any problems arise that would preclude the selected facility from accepting the waste, immediately notify the Engineer in writing of such situation. Identify and provide information on an alternate TSD that is properly licensed and acceptable to the
NYCDOT, and arrange for disposal at such facility after having obtained written approval from the Engineer.

g) Provide a certification for each manifested shipment that the waste was accepted by the recycling or disposal facility, and properly treated and disposed. Comply with all of the manifesting, certification, and reporting requirements for hazardous waste in accordance with 40 CFR 262, 40 CFR 268 and State regulations, including certificates of final disposal for each shipment.

h) If the signed manifest is not received from the disposal facility within forty-five (45) days of shipment, as directed by the Engineer, initiate the EPA Exception Report in accordance with 40 CFR 262.42, and take all steps necessary to locate the manifest and waste.

2. **Non-Hazardous Municipal/Construction Waste**

a) Procure all necessary waste permits or licenses that are required by State or City regulations.

b) Properly transport, and dispose of all non-hazardous municipal/construction waste.

c) Verify that waste is completely covered during transport.

d) If toxic metals or hazardous substances were detected during the laboratory testing, notify the disposal facility that such metals or materials are present in the waste.

e) Comply with additional City regulations as applicable.

f) Lead coated scrap steel shipped off-site for recycling must be properly wrapped and protected during transport to prevent paint chips discharging from the truck into the environment. Provide a letter from the recycling facility acknowledging the receipt of lead coated steel from the specific NYCDOT project site.

3. **Special Waste Requirements for Recycled Steel Grit**

a) When recycled steel abrasives are used, collect, handle, store, and transport the recycled steel abrasives, as hazardous waste. All waste generated from the recycled steel abrasives, including the recyclable steel abrasives, must also be treated as hazardous waste.

b) Manage the hazardous waste as per Section H (1) above.
4. Waste Water Handling and Disposal

a) Provide containers for the collection and retention of all waste water, including but not limited to the water used for bridge cleaning, hygiene purposes, laundering of clothing if done on site, cleanup activities, and water collected by compressed air moisture separators. Note that payment for the hygiene and laundering water is included under decontamination facilities for worker protection.

b) Filter visible paint chips and particulate from the water prior to placing it into the containers. Prior to disposal, test the water for total toxic metals and provide ample filtration (e.g., through a multi-stage filtration system ending in 5 microns or better if needed) until the water is not classified as hazardous. Conduct the necessary laboratory testing as described above.

c) Make disposal arrangements with the local publicly owned treatment works (POTW), sanitation company, or other appropriate permitted facility. Provide the Engineer with documentation signed by an official of the facility stating that the facility will accept the waste, and that the levels of any lead or other metals remaining in the water are acceptable. If the facility allows the filtered water to be placed into the sanitary sewer system, include such authorization in the letter. Provide a copy of the NYCDEP Discharge Permit for any discharge into the NYC sewer system. Waste water discharged to the New York City sewer system must be below the discharge standards established by the NYCDEP.

3.06 CLEANING AND CLEARANCE OF MATERIALS, EQUIPMENT, AND SURROUNDING SURFACES

A. General

1. Have the competent person inspect the Work site on a daily basis for compliance with the requirements of this Section and the approved Environmental Protection Plan, and prepare a daily report or daily log of observations made. Maintain the information at the project site and make it available to the Engineer or environmental consultant for review at any time.

B. Daily Cleaning of Work Site

1. Clean up paint chips, dust, materials and paint removal debris from the
unprotected ground, the soil, on or in the water or sediment, from surfaces of all equipment, around storm sewers or drains, or in areas where rain water could carry the debris into storm sewers or drains. When cleaning pavement surfaces take special care to remove all waste material so as to prevent it from being redistributed into the air by traffic.

2. Clean up the debris at least once each shift or more frequently if directed by the Engineer or environmental consultant.

3. Conduct the cleaning by manually removing paint chips, washing and wiping, and/or HEPA vacuuming.

4. Have the competent person document the results of the daily cleaning in a report or log.

C. Cleaning of Containment

1. When abrasive blast cleaning is employed, remove abrasive/paint debris from the containment floor in order to minimize excessive waste build up. Acceptable methods include the use of automatic waste conveyance systems or HEPA vacuums. If such ongoing methods of removal are not employed, conduct waste removal at a minimum every two hours or continuously, while abrasive blast cleaning is underway, to remove accumulations of waste, or as directed by the Engineer. Remove all abrasive/paint waste at the end of the shift, before new paint is applied, or before a prolonged work stoppage, such as for weather interruptions, or as directed by the Engineer.

2. When methods of paint removal other than abrasive blast cleaning are employed, conduct cleaning of the waste from within containment at the end of the shift, before new paint is applied, or before a prolonged work stoppage, such as for weather interruptions, or as directed by the Engineer.

3. Prior to moving the containment enclosure, clean the inside surfaces of the enclosure (walls, floors, ceiling, etc.) of dust and other spent material by vacuuming. Have the competent person conduct a visual inspection to verify that the surfaces are free of loose debris, dust, paint removal waste, grit, etc. prior to moving and document the results in the daily log or report. All scaffolding, platforms, floor sheathing must be removed prior to dismantling of containment tarps. Mechanical air ventilation must be maintained during all cleaning operations and must remain operational until the tarps are dismantled from the containments.

4. Prior to dismantling the containment, clean the inside surfaces to the extent that dust or debris are not dislodged when wiping a cloth across the
section. Have the competent person conduct the inspection and document the results in the daily log or report.

D. **Cleaning of Contractor Equipment and Materials**

1. Prior to removing equipment or reusable materials from the project site, remove all loose dust and debris from the surfaces to the satisfaction of the Engineer and environmental consultant.

2. Conduct the cleaning by manually removing paint chips, washing and wiping, and/or HEPA vacuuming.

3. Ductwork – Remove all accumulation of loosely held dust or debris from ductwork exterior by thoroughly vacuuming (using wet- or dry-powered HEPA vacuums), followed by wet washing as necessary. Clean the interior surface of ductwork using a low-pressure wash or air in conjunction with a system designed to capture dust washings, waste water and debris. After all visible, loose dust has been removed from inside the ductwork, seal the ends of each segment of duct using a minimum of double-wrapped, 6-mil polyethylene sheeting. Prior to transporting off site, the ductwork would be labeled “LEAD-CONTAMINATED.”

4. Have the competent person conduct clearance tests by wiping a cloth across representative surfaces. If dust or debris is dislodged, conduct additional cleaning until the surfaces pass the clearance test. Report the results of the testing in the daily report or log.

5. NYCDOT, the engineer, environmental consultant or authorized representative may collect and analyze wipe samples from equipment to confirm effectiveness of cleaning. An acceptance criteria of <400 µg/sq ft will be used.

6. All dust collectors and recycling units must have all filters removed and disposed of as hazardous waste during the project as necessary and prior to equipment leaving the project site.

E. **Final Cleaning/Clearance of Surrounding Property and Structures**

1. After all Contractor equipment and materials have been removed, conduct a visual inspection and clean up of the project site and surrounding property. This includes all areas used by the Contractor (e.g., staging and equipment yards, shower and trailer areas, waste storage, etc.), and all surrounding property, structures, buildings, equipment, and surfaces located within 100 feet in each direction from the bridge. If project debris is observed to be present beyond 100 feet from the structure, expand the limits of the inspection and clean up, as directed by the Engineer.
2. Test the surface layer of bare soil beneath bridges and up to 100 feet from either side of the structure for total lead concentrations. If the concentration of total lead exceeds 400 ppm, remove the top two inches (not including vegetation) of topsoil and replace with clean soil and/or sod.

3. Remove all lead dust, spent abrasives or other paint removal media, paint chips, solvents, materials of construction, fuel, and other litter. Clean up and remove the debris to the satisfaction of the Engineer and environmental consultant. This includes all visible debris and waste associated with bridge painting activities, even if the paint chips and abrasive waste are a pre-existing condition.

4. Clean the surrounding ground, equipment and other surfaces by manually removing paint chips, wet washing and wiping, and/or HEPA-vacuuming. The environmental consultant will be conducting visual cleanliness inspections and wiping a cloth across surfaces to verify that dust has been removed. Conduct additional cleaning as required, based on the results of these inspections.

5. Clean the surrounding water with the use of approved materials and equipment including but not limited to water booms and/or boats with skimmers, as directed by the Engineer.

6. Properly collect, handle, store, transport and dispose of all material and/or water along with all waste products generated during the Work including but not limited to rags, tape, disposable coveralls, and filters.

7. Prepare a letter report presenting the results of the inspections and tests conducted to verify the final cleanliness of the project site, surrounding property, waterways, equipment, buildings, and structures.

3.07 METHOD OF MEASUREMENT

A. Worker Protection Plan – The work of developing and implementing the Worker Protection Plan will be measured on a lump sum basis. This includes all medical testing and exposure monitoring sample analysis, and the furnishing, installation, maintenance, relocation, and removal of decontamination facilities. Included in the price is the cost of testing, storing, and disposing all hygiene water.

B. Environmental Protection and Project Cleanup – The work to develop and implement the environmental protection plans; supply and maintain the TSP-lead monitors; conduct visible emissions evaluations; and conduct routine and final project inspections and clean up will be measured on a lump sum basis.
C. **Containment System** – The work to design the containment/ventilation system, prepare all working drawings and submittals, and provide all labor, materials and equipment necessary to install, operate, and remove the containment systems, and provide all necessary lockout/tagout will be measured on a lump sum basis. On single projects where different types of containment are being used (e.g., unique designs for girder spans versus through truss, or one design for power tool work versus blast cleaning), the Contractor may elect to provide a separate lump sum price for each type of containment system being employed.

D. **Disposal of Paint Removal Waste and Waste Water**

1. This work will be measured on a lump sum basis to include all paint removal waste and waste water (with the exception of hygiene water which is included under decontamination facilities) accumulated, packaged, stored, transported, treated, and disposed in accordance with the requirements of this Section.

2. The accumulation, packaging, storage, transportation, and disposal of waste other than paint removal waste or waste water (e.g., construction debris) is addressed in this specification, but it is not measured for payment. The cost for the handling and disposal of this waste is considered to be incidental to the surface preparation and painting items.

E. **Community Notification** – The work to develop and distribute pamphlets and participate in community meetings will be measured on a lump sum basis. The specific scope of Contractor involvement will be defined by the NYCDOT in the Special Provisions.

### 3.08 BASIS OF PAYMENT

A. **General** – The extent of the Contractor’s compliance with all provisions of this specification (e.g., control of emissions and worker exposures, performance of the containment, timeliness of disposal, etc.) 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 NYCDOT.

B. **Worker Protection Plan**

1. The lump sum price bid shall include labor costs for the IH and the competent person, and the cost of all materials, personal protective equipment, respirators, other equipment, and fees necessary to complete the Work.

2. All costs related to worker monitoring and medical surveillance, including worker time and transportation for medical testing, the cost of providing
results to employees and the Engineer, and the cost for collection of exposure monitoring samples, shall be included in the lump sum price. No payments shall be made for additional medical tests or laboratory analysis required due to an increase in the blood lead level of any employee(s) above the OSHA threshold of 40 $\mu$g/dl.

3. The lump sum price shall also include the cost of ground rental, utility and waste water disposal charges necessary to furnish, install, clean, maintain, relocate and remove the decontamination facilities as necessary to complete the Work.

4. Progress payments for the development and installation of the Worker Protection Plan will be computed in accordance with the following schedule:

   a) 15% of the lump sum price will be paid when work entailing a potential for lead exposure has begun, the work is in compliance with the Worker Protection Plan as determined by the Engineer, and the following items (if required) have been completed:

      (1) Certification of completion of lead training for supervisors and employees is provided to the Engineer.

      (2) Certification of completion of respirator training and documentation of respirator fit testing for all employees who will wear respirators is provided to the Engineer.

      (3) Documentation of purchase or mobilization of all required respirators and Personal Protective Equipment (PPE) is provided to the Engineer.

      (4) Documentation of purchase or mobilization of decontamination facilities is provided to the Engineer.

      (5) Documentation of initial medical testing and a summary of the results is provided to employees and the Engineer.

      (6) Documentation of initial exposure monitoring and a summary of the results are provided to employees and the Engineer.

      (7) Warning signs are posted in exposure areas.

   b) 75% of the lump sum price will be paid in proportional amounts over the duration of Work, based on the percentage of the work completed.
(1) The Engineer will determine a daily rate of payment by dividing 75% of the lump sum amount bid for the Worker Protection Plan by the total number of workdays, as shown in the Contractor’s schedule, without regard to any extension of time.

(2) At any time, the Engineer may request the Contractor to submit a revised schedule that reflects the actual progress of the Work. Failure to submit a revised schedule upon request will result in termination of the progress payments.

(3) No payments will be made under this item for each calendar day during which there are substantial deficiencies in compliance, as determined by the Engineer. The amount of such calendar day non-payment(s) will be deducted from the next progress payment.

(4) 10% of the lump sum price will be paid when the exit medical exams have been offered as required and results provided to employees and the Engineer, the final monthly report has been received, all work which entails a potential for lead exposure has been demobilized, and all equipment associated with such operations has been removed from the project site.

C. Environmental Protection and Project Cleanup

1. The lump sum price bid shall include the cost for developing and implementing the environmental protection plans; supplying, setting up and maintaining the TSP-lead monitors including power, conducting visible emissions evaluations, correcting emissions as required, and conducting routine and final project inspections and clean up.

2. Prior to the beginning of any Work, the Contractor will supply the Engineer with an initial estimate of workdays required to complete environmental protection and cleanup activities. This initial estimate will not be considered final. The Engineer may request a revised estimate at any time during the progress of the Work.

3. Progress payments will be made. They will be based upon the number of workdays required to complete all of the dust producing operations such as abrasive blast cleaning or other paint removal, containment moving and demobilization, and project cleanup. Monthly payments will be made based on the percentage of work completed.
D. **Containment System**

1. The lump sum price bid shall include the cost for preparing the containment/ventilation system design, working drawings, and all labor, materials and equipment necessary to install, operate, and remove the containment systems. As directed by the Pay Items, provide a separate price for various types of containment design used on unique sections of the bridge (e.g., girder approaches versus through truss), or for unique methods of paint removal (containment for power tool cleaning versus abrasive blast cleaning).

2. All Work shall be done in a manner satisfactory to the Engineer. Payment for the assessment and clean up of emissions and releases, and final project cleanup, are addressed above in the Environmental Protection and Project Cleanup item.

3. Prior to the beginning of any work, the Contractor will supply the Engineer with an initial estimate of workdays required to complete all of the paint removal and clean up work involving the use of containment(s). This initial estimate will not be considered final. The Engineer may request a revised estimate at any time during the progress of the Work.

4. Progress payments will be made. They will be based upon percentage of completion. The percentage of the total containment cost(s) represented by each section of the bridge (e.g., each span) will be established in advance, and the lump sum price(s) divided accordingly. A total of 60% of the proportional containment amount(s) will be issued when the last containment in the given section (e.g., span) is erected. The remaining 40% of the proportional amount will be issued when the last containment is removed from the section.

5. Payment amounts will be deducted for each calendar day during which there are substantial deficiencies in compliance with the requirements of this specification, as determined by the Engineer. Substantial deficiencies are defined as a situation in which either of the following are true:

a) A visible emission is observed which indicates failure to perform “in reasonably close conformity” to the specification requirements, and the visible emission is for a similar cause as a previous visible emission that required work to be stopped and corrective action taken.

b) Violations of TSP-lead criteria occur.

6. Payment deductions under this item will be taken when the last containment on a given bridge section has been removed. At that time, the
total deduction will be calculated as follows:

\[
\frac{\text{Proportional Lump Sum Price for Bridge Segment}}{\text{Actual No. of Workdays Required to Complete the Segment}} \times (\text{No. of Days with Substantial Deficiencies})
\]

This amount will be deducted from the final monies due to the Contractor for the given bridge section.

7. Final payment will not be made until verification that all Work has been performed to the satisfaction of the Engineer.

E. Disposal of Paint Removal Waste and Waste Water

1. The lump sum price for the disposal of paint removal waste and waste water used for cleaning the bridge and equipment shall include the cost of all labor, materials, equipment, sampling, testing, and fees necessary to complete the Work. The cost for the handling, testing, and disposal of hygiene water is included in the cost for the decontamination facilities.

2. The lump sum price shall also include the following fees which are the responsibility of the Contractor:

a) Special Assessment on Generation, Treatment or Disposal of Hazardous Waste in New York State. The Contractor shall pay the fee to the NYS Department of Taxation and Finance on a quarterly basis within 20 days after the end of each quarter. The fee will be based on actual tons of hazardous waste per quarter. The Contractor shall be responsible for all interest and penalties associated with late or non-payment of taxes.

b) Hazardous Waste Fee (Generator Fee) – The Contractor shall pay the fee to New York State Department of Environmental Conservation on an annual basis (once a year). The fee is based on the amount of hazardous waste generated per year. The Contractor shall be responsible for all interest and penalties associated with late or non-payment of fees.

c) Hazardous Waste Regulatory Surcharge Fee – The Contractor shall pay the fee to the New York State Department of Environmental Conservation on an annual basis (once a year). The fee is based on the amount of hazardous waste generated per year. The Contractor shall be responsible for all interest and penalties associated with late or non-payment of fees.

d) The Contractor shall contact the NYS Department of Taxation and
Finance and NYS Department of Environmental Conservation for proper procedures and forms for payment.

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

4. Progress payments will be made based on the percentage of project completion at a maximum of 10% completion intervals. Payment will be issued after the waste for the given interval has been shipped and the signed manifest is returned. For example, if 10% of the project has been completed, but none of the waste has been shipped and/or the manifests were not returned, payment for 10% of the waste will not be issued at that time.

F. Community Notification – Payment will be made on a lump sum basis to cover the cost of furnishing all labor and materials to develop and distribute pamphlets and participate in community meetings as directed by the NYCDOT.

G. Pay Items – Payment will be made under the following items:

<table>
<thead>
<tr>
<th>Item No</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXX.10</td>
<td>Worker Protection</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>XXX.20</td>
<td>Environmental Protection and Project Cleanup</td>
<td>Lump Sum (for each Structure)</td>
</tr>
<tr>
<td>XXX.30NNNN</td>
<td>Containment System(s)</td>
<td>Lump Sum (for each designated type)</td>
</tr>
<tr>
<td>XXX.40</td>
<td>Treatment and Disposal of Paint Removal Waste and Waste Water</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>XXX.50</td>
<td>Community Notification</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>
APPENDIX A – SUBMITTALS

A.01 GENERAL

A. This Appendix identifies the plans, programs, and documentation required prior to mobilization on site, at the start of construction, and during the construction phase.

A.02 PRE-CONSTRUCTION SUBMITTALS

A. Submittal Schedule and Engineer Acceptance

1. Submit the following plans and programs to the Engineer for review and acceptance a minimum of 30 days prior to mobilization at the project site. The Contractor shall not begin any paint removal Work until the Engineer has accepted the submittals.

2. Do not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the Work, or for addressing health and safety concerns. Acceptance of the programs does not relieve the Contractor from the responsibility to conduct the Work in strict accordance with the requirements of Federal, State, or City regulations and this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

B. Project Schedule – Provide the Engineer with an initial estimate of the workdays required to complete each phase of the project (e.g., mobilization, paint removal, paint application, and demobilization). Include the estimated number of workdays each month when lead exposures are anticipated.

C. Qualifications, Experience, and Certifications – Provide written qualification, experience, and certification information for the following:

1. Contractor – Provide proof of SSPC QP-1 and QP-2 certifications.

2. Provide evidence that the laboratories have two certifications. One certification must be from the New York State Environmental Laboratory Approval Program (ELAP) in the appropriate category. The second certification must be from either the American Industrial Hygiene Association (AIHA) or Environmental Protection Agency (EPA) in the appropriate category:
<table>
<thead>
<tr>
<th>MEDIA</th>
<th>CERTIFICATION 1 (mandatory)</th>
<th>CERTIFICATION 2 (One of the following)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NYSELAP category</td>
<td>AIHA (IHLAP) category</td>
</tr>
<tr>
<td>Worker or Regulated Area</td>
<td>Air &amp; Emissions - Lead, Total</td>
<td>Metals</td>
</tr>
<tr>
<td>Hi-volume Air</td>
<td>Air &amp; Emissions - Lead, Total</td>
<td>N/A</td>
</tr>
<tr>
<td>Paint Chip</td>
<td>Solid and Hazardous Waste - Lead in Paint</td>
<td>N/A</td>
</tr>
<tr>
<td>Settled Dust</td>
<td>Solid and Hazardous Waste - Lead in Dust Wipes</td>
<td>N/A</td>
</tr>
<tr>
<td>Soil</td>
<td>Solid and Hazardous Waste - Lead, Total</td>
<td>N/A</td>
</tr>
<tr>
<td>TCLP</td>
<td>Solid and Hazardous Waste - TCLP</td>
<td>N/A</td>
</tr>
</tbody>
</table>

3. Laboratory for blood lead analysis – Provide the name, address, contact person, and proof that the laboratory conducting the worker blood lead analysis is approved by OSHA and the NYS DOH. A current list of approved labs may be obtained from the OSHA Technical Center at (801) 487-0267, or at the following address:

OSHA Technical Center  
P.O. Box 65200  
Salt Lake City, UT 84165-0200

4. Industrial Hygienist (IH) - provide the name, experience, and qualifications of the IH who will be reviewing, approving and sealing the site-specific Worker Protection Plan. The IH must meet one or more of the following qualifications:

a) Current certification by the American Board of Industrial Hygiene (Certified Industrial Hygienist - CIH).

b) 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.
c) 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.

5. Competent Person, IH, supervisors, and foremen – Provide proof that the
competent person, IH, and all project superintendents and foremen, have
successfully completed the SSPC C3, Competent Person and Supervisor
training, with refresher training completed within the last 12 months, as
well as an NYCDOT-approved course that addresses the procedures and
documentation specific to NYCDOT projects. OSHA 40 hour
HAZWOPER certification plus 8 hours of annual refresher training is
required for the competent person/supervisor responsible for managing or
handling hazardous waste. An OSHA 24 hour HAZWOPER certification
plus 8 hours of annual refresher training is required for workers who will
be handling hazardous waste.

6. Visible Emission Observers – Provide evidence that personnel performing
visible emissions evaluations have been trained and certified as a Method
9 Opacity observer.

D. Contractor Chain of Command

1. Submit a listing of key Contractor personnel, including names and relative
positions, addresses, and telephone and pager numbers.

2. Include the names and telephone/pager numbers for contact persons who
are available on a 24-hour basis in the event of emergencies.

E. Worker Protection Plan

1. Submit two copies of a written Worker Protection Plan to the Engineer for
review and acceptance. The Worker Protection Plan must provide for the
protection of Contractor workers from all project hazards including but
not limited to fall protection, confined space (if applicable), lock out/tag
tout, hearing and eye protection, and exposure to hazardous materials or
conditions.

2. Include as part of the plan, or in a separate submittal, a binder containing
MSDS for all materials that will be used on the Project site. If all MSDS
are not available at the pre-construction stage, provide the MSDS before
using the product on site.

3. Address as part of the Worker Protection Plan, or in a separate document,
the personal protective equipment and hygiene practices that will be
invoked to protect workers from exposure to pigeon droppings in
accordance with NYSDOT Safety Bulletin SB-94-4.
4. The Worker Protection Plan must be a project-specific program, prepared under the direction of, and signed by, an Industrial Hygienist (IH).

5. Address worker protection from lead in strict accordance with 29 CFR 1926.62 and the requirements of this Specification, as well as from other toxic metals in the paint (e.g., 29 CFR 1926.1126 for hexavalent chromium, 29 CFR 1926.1127 for cadmium, and 29 CFR 1926.1118 for inorganic arsenic). When toxic metals are present in the paint for which OSHA has not developed a comprehensive health and safety standard, include provisions to assure that the workers will not be exposed above the Threshold Limit Values (TLVs) established for the metal as identified in 29 CFR 1926.55. In the event of a conflict between the requirements of this specification and an OSHA standard, follow the most restrictive requirement.

6. Address the requirements of 29 CFR 1926.62, this specification, and other applicable Federal or State regulations in the Worker Protection Plan. A Worker Protection Plan is required any time that exposures to lead or other toxic metals exceed the Action Level. These elements of the Worker Protection Plan include, but are not limited to, the following:

   a) A description of the Contractor’s lead health and safety organization, including the responsibilities and qualifications of the IH and the competent person.

   b) A description of arrangements for ensuring that subcontractors, if any, will comply with the Worker Protection Plan.

   c) A description of each activity which will entail a risk for lead exposure.

   d) Descriptions of the engineering, administrative and work practice controls that will be used to reduce exposure. As required by 29CFR1926.62, all feasible engineering, administrative and work practice controls must be implemented before considering the use of respirators to reduce exposure.

   e) A respiratory protection program in compliance with 29 CFR 1910.134 including commitments to provide the necessary fit testing, respirator training, and medical evaluations. When lead is present, include the provisions of 29 CFR 1926.62. When hexavalent chromium is present, include 29 CFR 1926.1126. When cadmium is present, include 29 CFR 1926.1127. When inorganic arsenic is present, include 29 CFR 1926.1118. Address the selection, use, maintenance and inspection of respirators, and
qualifications for respirator users.

f) A description of the Personal Protective equipment (PPE) to be provided, and plans for regular laundering or replacement of protective clothing.

Provide the name, address, and qualifications of the launderer, if one will be used, for the cleaning of reusable clothing. Provide a letter from the laundry indicating that it is permitted to handle clothing contaminated with lead and/or the other toxic metals of concern.

g) A description of the hygiene practices the employees will be required to follow, and the procedures that will be implemented for the proper storage, testing, and disposal of hygiene and laundry wash water. Include a description, floor plan, and proposed number of decontamination facilities and hand wash stations that will be provided.

h) 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 name and address of the clinic(s) where testing will be performed, and of the OSHA-approved laboratory where blood samples will be analyzed.

i) Plans for worker and supervisor lead training.

j) An initial assessment of anticipated exposure level(s), including any relevant historical exposure monitoring data.

k) Plans for performing exposure monitoring, and for notifying employees and the Engineer of results.

l) Plans for posting warning signs in high exposure areas.

m) Plans for regular inspections of the jobsite by the IH and the competent person. The IH shall inspect the site at least monthly and the competent person at least daily.

n) Provisions for providing parking area(s) for worker’s cars where they will not be exposed to lead.

o) Plans for updating the Worker Protection Plan.

p) Plans for keeping and maintaining the records, and issuing monthly summary reports.
q) Include the name of the competent person who will be making daily inspections of project activities to ensure compliance with the program, and the signature of the IH responsible for the development of the Plan.

7. Verify that any Subcontractors working for the Contractor are included in the program or in a separate program which meets the requirements of this Specification. If Subcontractors are operating under a separate program, include the program with the submittals.

8. Include statements that the Contractor will provide NYCDOT employees, NYCDOT Agents (such as REI Consultants engaged in inspection activities, and employees of the environmental monitoring firm), with the same OSHA related equipment and facilities that are provided to the Contractor and sub-contractor personnel. These include:
   a) Respiratory protection including cleaning and maintenance, and work areas to wash faces and respirator face piece. NYCDOT employees or Agents are responsible for assuring that all of their personnel have the necessary medical surveillance, are qualified to wear the respirators, and have been properly fit tested.
   b) Protective work clothing including laundering or disposal.
   c) Clean change areas including separated storage facilities for street and work clothes.
   d) Hand washing facilities per 29 CFR 1926.51.
   e) Shower facilities per 29 CFR 1926.51.

9. Review the Worker Protection Plan at least annually during the portion(s) of the Project which involve the disturbance of toxic metals. Revise and update as necessary to comply with any newly issued Federal, State or local regulations or revisions to existing regulations. Verify that the IH signs off on all reviews and revisions.

10. Submit a letter to the Engineer if it is proposed that objective data, rather than monitoring, will be used to prove that exposures from a given activity cannot exceed the Action Level for lead or other metals contained in the coating. Provide the objective data in writing, signed by the Contractor’s IH in strict accordance with the requirements of 29CFR1926.62 (d)(3) and 29 CFR 1926.1126(k)(3). The Contractor can rely upon this data in lieu of monitoring only upon acceptance by the Engineer.
F. Environmental Protection Plan – Submit an Environmental Protection Plan to the Engineer. The plan shall include but not be limited to, the following elements:

1. Assessment of Visible Emissions and Releases
   a) Provide a written program for the observation of visible emissions during Project activities. Note that these inspections by the Contractor are in addition to the observations that will be made by the Engineer or environmental consultant.
   b) Visual assessments of emissions is required on a continuous basis while dust producing operations are underway. Include the frequency and methods of observation and inspection that will be made, and areas or work activities that will be observed.
   c) Include a statement that the Contractor will shut down operations, adjust work practices, modify containment and take other steps as necessary to comply with the results of the visible emissions assessments as directed by the Engineer and/or the environmental consultant.

2. Establishment of Regulated Areas - Provide written procedures in accordance with the requirements of Part 3 of this Specification for the instrument monitoring of airborne exposures surrounding project activities, and the establishment of visible barriers (regulated areas) to control the access of personnel within the exposure zones.

3. Ambient Air Monitoring
   a) Provide a written description of the TSP-lead high volume ambient air monitoring equipment the Contractor will provide for the Work. Include a description of the power that will be provided to operate the units. Provide catalog cut sheets for the monitors and power generators (if used).
   b) Provide a written description of the maintenance and security measures that will be taken to protect the monitoring equipment (i.e., full time guard, removal and reinstallation of the equipment each day, etc.). Describe the provisions made for setting up and removing (or securing) the monitors each day, as stipulated in this Section.
   c) The environmental consultant will also be conducting real time monitoring (using their own equipment) to evaluate airborne particulate levels at various locations such as the containment seals.
and entryways.

d) Include a statement that the Contractor will shut down operations, adjust work practices, modify containment and take other steps as necessary to comply with the results of the high volume or real time monitoring as directed by the Engineer and/or the environmental consultant.

4. Evaluations of Ground (Soil), Equipment, Structures and Other Surfaces

a) Provide a written program for the visual inspection of the ground, soil, equipment, and other surfaces beneath and around the project site for the presence of project dust and debris. Include the frequency of the inspections, and the inspection procedures that will be followed both during the Work and upon completion of project activities. Note that these inspections by the Contractor are in addition to the observations that will be made by the Engineer or environmental consultant.

5. Water and Sediment Evaluations

a) Provide a written program for the visual inspection of the water and sediment beneath and around the project site for the presence of project dust and debris. Include the frequency of the inspections, and the inspection procedures that will be followed both during the Work and upon completion of project activities. Note that these inspections by the Contractor are in addition to the observations that will be made by the Engineer or environmental consultant.

6. Cleaning/Clearance Plans

a) Provide a written program identifying the procedures, methods, equipment, and materials that will be used to conduct daily and final cleanup of project dust and debris. Include a description of the cleanliness examinations that will be made by the competent person (e.g., both visual examinations and more detailed inspections involving wiping the surfaces as described in Section 3.06). Include provisions for recleaning equipment that fails wipe tests (<400 µg/sq ft) that may be conducted by the environmental consultant.

b) Indicate that these inspections are conducted to assure that the work site and surrounding equipment, property, structures, ground, soil, water, sediment, and other surfaces have been properly cleaned and are free of visible paint chips, blasting material, or
other debris in compliance with this Section. Cleaning is required routinely each day and upon completion of all project activities.

c) When wet wiping or washing is employed, identify the solutions proposed for cleaning the surfaces and equipment.

7. Sensitive Natural Resources and Endangered or Protected Species

a) The NYCDOT will stipulate whether sensitive natural resource areas are located around the project. If the project is located in a natural resource area, develop a site-specific Habitat Protection Plan addressing the steps that will be taken to protect these sensitive ecological areas from damage.

b) The NYCDOT will advise whether peregrine falcons, barn owls or red-tailed hawks are nesting on the bridge. If present, develop a site-specific plan for the sequencing of paint removal operations to avoid disturbing nesting pairs, including obtaining the required Federal USF&WS and NYSDEC permits if it is proposed that unoccupied peregrine falcon nests be moved.

G. Spill Response Plan

1. Develop and implement a Spill Response Plan to control and clean up spills or dispersions of deteriorated paint chip material, and/or abrasive blast material.

2. Specifically identify the procedures that will be used to comply with the following steps:

a) Containment of the breach.

b) Immediate notification of the NYCDOT Engineer and, as directed by the Engineer, other agencies such as the Coast Guard or the New York State Department of Environmental Conservation Spill Bureau.

c) Collection and removal of the spilled material by washing and wiping and/or HEPA vacuuming.

d) Visual inspections to confirm complete removal of the material.

e) Changes to work practices and/or equipment and material used to prevent a reoccurrence.

H. Noise Permits – If work will be performed outside of the hours 7AM to 6PM on
weekdays, obtain a permit authorizing these activities, and provide the Engineer with a copy.

I. **Containment Plans and Drawings** – Provide six (6) complete sets of detailed working drawing(s) of each containment system proposed for use on the structure. The drawings shall be prepared and stamped by a registered, licensed Professional Engineer. No paint removal work is allowed to begin until the drawings have been reviewed and accepted by the Engineer.

1. Provide plan and elevation views of the containment enclosure in relation to the bridge structure.

2. A design analysis of the loads on the bridge 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.

3. If the containment system is supported by the bridge, 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 Allowable Stresses defined in AASHTO Manual for Maintenance Inspection of Bridges (current edition).

4. 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 live load plus the impact. The highway live load used for analysis purposes shall be either a HS20 truck or equivalent lane loading, whichever is greater, unless a different highway live load is shown on the plans.

   Except as noted, the analysis shall use the loadings and design assumptions in the NYSDOT Standard Specifications for Highway Bridges.

5. Provide all data, calculations, and assumptions used for the design of the containment and ventilation system. Provide air make-up locations, the location(s) of the exhaust ductwork, and the type and location of dust collector(s) that will be employed. Provide manufacturer’s data sheets, equipment weights, and airflow capacities of the equipment.

6. Provide a description of the type of containment material(s) used for the walls and ceiling, and the type of flooring system or working platform employed. 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.

7. Provide technical data sheets, specification sheets, any other information needed to thoroughly describe the materials proposed for use.

8. Identify the methods by which the containment enclosure will be supported or attached to the bridge (e.g., rollers, clamps). Welding, bolting, or similar connections will not be allowed.

9. Identify the methods 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.

10. Identify the method that will be used to seal the entryway.

11. Provide a description of how the drainage run-off from existing deck drains will be routed through the enclosure.

12. Provide the plans for maintaining the operation of any existing equipment or bridge facilities during the Work (e.g., navigation, anti-collision, aerial, roadway, and parking lot lighting).

13. Provide the type, size, and configuration of auxiliary lighting that will be provided for inside the containment enclosure.

14. Provide information on any temporary heating units proposed for use, fuel to be used and the safety measures to be employed for heater use and fuel storage.

15. Describe the methods that will be used to provide worker access to the enclosure (personal lifts, scaffolds, etc.) and the procedures and equipment that will be used to protect workers from falls.

16. Provide details on how the use of the containment enclosure will be coordinated with the maintenance and protection of traffic. Encroachments onto roadways, and clearances over waterways and railroads shall be clearly identified. Structures that span a navigable waterway may be subject to regulation by the U.S. Coast Guard, the U.S. Army-Corps of Engineers, the N.Y.S. Thruway Authority – Office of Canals, and the N.Y.S. Dept. of Environmental Conservation.

17. Provide details on how the containment enclosure is assembled and 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.

18. Describe the provisions made for moving the containment out of navigation lanes when working over active waterways.

19. Describe the provisions made for moving or lowering the containment in the event of inclement weather.

20. Identify the methods that will be used to verify adequate air flow characteristics and negative pressure within containment.

21. Describe the containment inspection and cleaning procedures that will be undertaken.

22. Include any other information needed to thoroughly describe the containment plan.

J. **Emergency Containment Demobilization Plan**

1. Provide a detailed plan for dropping the containment upon notification of inclement weather, including but not limited to conditions such as sustained wind speeds or gusts of 40 mph (64 kilometers/hour) or greater or heavy snow.

2. Include the methods and procedures that will be followed to assure that:
   a) all equipment and tools are secured,
   b) the containment is cleaned of loose dust and debris,
   c) all containment system roof and wall enclosure elements that could contribute to adding wind load to the bridge structure are removed or lowered (excluding containment framing), and
   d) snow and ice are removed from the containment routinely, as well as under storm conditions.

K. **Lockout/Tagout Plan**

1. Provide the procedures in accordance with 29 CFR 1910.147 and 1910.333 that will be followed for lockout/tagout of existing electrical utilities within containment or other work areas as appropriate.

2. Include provisions for coordinating lock-out/tag-out activities with
NYCDOT and the Utilities.

L. Waste Management Plan

1. Waste Handling, Storage, and Disposal
   a) Provide the procedures that will be followed for the collection of random and representative samples of the waste for sampling and testing, and the testing and analysis procedures that will be used to characterize the waste before shipping.
   b) Provide procedures for the site handling, storage, container inspection, packaging, labeling, manifesting, transporting, and disposal of the waste. Include a written containment plan for adequately shielding and protecting the surrounding area when transferring and/or conveying hazardous waste from one container to another to prevent any dispersion or spills.
   c) Provide a detailed contingency plan that addresses worker training and the notification, containment, clean up, and reporting that will be undertaken in the event of a spill during the jobsite handling and transportation of the waste.

2. Hazardous Waste Transportation
   a) Submit evidence that each proposed hazardous waste transporter has a 6 NYCRR Part 364 Waste Transporter Permit.
   b) If it is proposed that the transportation pass through other states, provide evidence that the transporter complies with the applicable laws, codes, rules and regulations of the respective states.

3. Hazardous Waste Disposal
   a) Provide the name, address, license or permit number, qualifications, and contact person of each proposed legally permitted hazardous waste disposal facility that will be used.
   b) Advise each proposed recycling or waste disposal facility that paint removal waste will be generated (e.g., abrasive/paint debris), and identify the metals that the waste will likely contain. Based on that information, request a letter from each facility, stating that the facility can accept this type of waste, is authorized to accept the waste under the laws of the State of residence, has the required capability to treat and dispose of the materials, and will provide or ensure the ultimate disposal method indicated on the Uniform
Hazardous Waste Manifest.

c) Provide the Engineer with the original letter signed by a legally authorized representative of the facility prior to shipping any hazardous waste but within enough time to ensure all wastes are disposed within Contract required time frames. Include a copy of permits or letter of authorization to operate the facility and provide a signed statement from the disposal facility that the waste shipping containers that the Contractor proposes to use are acceptable to the facility.

d) If recycled steel grit abrasives will be used, the Contractor shall advise the disposal facilities that the paint removal waste must be handled and stabilized as if it tested hazardous, even if the initial TCLP test results are below hazardous thresholds. Provide the Engineer with the proposed means of stabilization that will be used by the facility to comply with the requirements of this specification.

e) If it is proposed that a secondary smelter will be used for the recycling of the hazardous waste, provide evidence that the smelter holds a valid EPA and consignment state approval for the treatment of the hazardous materials present in the waste that will be generated (e.g., D008 in the case of lead-containing waste).

4. Waste Water Disposal Information

a) Submit the name, address, and contact person of the facility that will be accepting the wastewater for disposal. Wastewater under this item is water used for washing and cleaning the bridge and equipment. The handling and disposal of hygiene water is included as part of the decontamination units under the Worker Protection Plan.

b) The Contractor shall advise the facility of all of the toxic metals and anticipated concentrations that the water will likely contain. Based on that information, request a letter from the proposed facility stating that the facility can accept waste water, is authorized to accept the waste under the laws of the State of residence, and has the required capability to treat and dispose of the waste water. If the facility indicates that the wastewater can be placed into the sanitary sewer system, include such an authorization in the letter. Provide the Engineer with the original letter signed by a legally authorized representative of the facility, including a copy of permits or letter of authorization to operate the facility.
5. **Non-Hazardous Waste Transportation and Disposal Information**

   a) Provide the name, address, license or permit number, qualifications, and contact person of each proposed hauler of non-hazardous waste (note that paint removal waste has been declared hazardous).

   b) Submit the name, address, license or permit number, qualifications, and contact person of each permitted waste landfill that will accept the non-hazardous (construction) waste, and the waste which passes TCLP, but which contains toxic metals.

   c) Provide a letter of intent from the proposed legally permitted landfill operator agreeing to accept waste which passes TCLP, but which contains toxic metals.

**A.03 CONSTRUCTION START UP SUBMITTALS**

**A. Worker Protection** – Submit the following documentation to the Engineer prior to the initiation of lead exposure-producing operations:

1. Documentation of purchase or mobilization of respirators and personal protective equipment (PPE).

2. Documentation of purchase and mobilization of decontamination facilities before beginning the project.

3. Certification of completion of lead training for supervisors and employees (including SSPC C3 and NYCDOT project-specific requirements, such as HAZWOPER).

4. Documentation of respirator fit testing for all employees who will wear respirators.

5. Verification that the employees who will potentially be exposed to lead above the Action Level have successfully completed the necessary medical surveillance. For employees who refuse to participate in the medical examinations and biological monitoring, provide written proof signed by the employee, that they were offered, but declined the examinations and monitoring.

**B. Certification of Containment Installation**

1. Prior to working within each unique containment design, submit a letter signed and sealed by the containment design engineer stating that the
containment system has been assembled as shown on the approved, signed and sealed drawings. The inspection shall be performed by the design engineer, or a designee employed by the same firm and working under the direction of the design engineer,

2. If the containment is not installed in accordance with the design drawings, and field modifications are made, issue supplemental calculations for the new design for Engineer review and approval in accordance with the original submittal requirements.

A.04 CONSTRUCTION PHASE SUBMITTALS

A. Competent Person Daily Reports – Make the competent person’s daily oversight reports or logs available for review by the Engineer or environmental consultant when requested. Include enough information and observations to demonstrate compliance with the specification requirements and the documentation requirements of the following plans:

1. Compliance with the Worker Protection Plan.

2. Compliance with Environmental Protection Plan including daily and final project cleanup.

3. Compliance with the Waste Handling Plan.

4. Compliance with the Containment submittals.

B. Worker Protection – Submit the following documentation to the Engineer throughout the course of the project:

1. For all new supervisors and employees who begin Work after the initial project start-up, before the individual begins working on the project, provide certification of completion of lead training (including SSPC C3 and NYCDOT project-specific requirements), respirator fit testing, and verification that they have successfully completed the necessary medical surveillance. For employees who refuse to participate in the medical examinations and biological monitoring, provide written proof signed by the employee, that they were offered, but declined the examinations and monitoring.

2. Worker exposure monitoring results (included in the monthly summary report described below).

3. Depersonalized results of all employee medical testing at the end of each month that testing is performed (included in the monthly summary report described below).
4. Documentation of any medical removals within 1 day of the removal, a description of what triggered them, and the corrective measures taken.

5. Copies of the hygiene water test results (water used for washing, showering, or laundering clothing on site). Tests are to address all of the parameters established by the POTW to confirm the acceptability of the filtration. Provide the Engineer with the test results within 5 days of receipt and before disposal or discharge of the water.

6. Any revisions or updates to the Worker Protection Plan immediately upon development.

7. Confirmation that the parking lots for worker cars are not in lead-exposure areas.

8. MSDS for all new products and materials brought onto the Project site. At the Engineer’s discretion, the Contractor may be directed to maintain the MSDS at the Project site only, rather than provide a separate copy to the Engineer in addition to the Project site copy.

9. Monthly progress reports - Except where the Contractor can document that employee lead exposure will be below the Action Level, at the end of each month of Work which entails potential lead exposure, submit a report to the Engineer which has been reviewed, signed, and certified by the IH. Submit the report within 10 calendar days after the completion of each month. This report shall contain the following elements:

   a) A summary of the Work entailing potential lead exposure that was completed in the last month including a summary of the observations made by the IH during the monthly visit and any required intervention activities.

   b) A statement 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, this specification, and all other applicable Federal and State regulations.

   c) A description of any interventions or deficiencies noted, along with a summary of the corrective actions taken.

   d) A summary of the results of any exposure monitoring or medical testing which was completed in the past month. To protect worker privacy, these results shall not include the individual names or Social Security numbers of the workers tested. Instead, workers shall be identified by trade (e.g., ironworker, painter, laborer, etc.)
and with an individual control number so that their exposure can be tracked throughout the project.

10. Results of any exposure monitoring conducted on the Engineer and NYCDOT Agents. Provide the results within the same 5 day notification period required for Contractor employees.

C. Visible Emissions and Releases

1. Record the results of the daily assessments of visible emissions and releases in a log or report form approved by the Engineer. Include the following information at a minimum: Contract number, Contractor’s name, Work location, date of observations, daily observation results (location and duration of emission), general comments, outline of the visible emission criteria, notation of compliance or noncompliance with the visible emission criteria, notification of Agencies as applicable, corrective actions, and signature block for the observer.

2. Provide the Engineer with an immediate verbal report each time that unacceptable visible emissions or releases are observed.

3. Document all cases where Work has been halted due to visible emissions or releases, the resulting cleanup activities performed, the reason or explanation for the emission or release, and the corrective action taken to avoid a reoccurrence. Provide the written report to the Engineer within 48 hours of the occurrence.

D. Regulated Area Monitoring – The laboratory must provide the results of regulated area monitoring to the Contractor within three days of the field sampling. Provide the test results to the Engineer verbally within one day of receipt, and in writing within 5 working days thereafter.

E. Containment Scaffolding Inspection Log - Maintain, and make available for review by the Engineer, a daily log of the inspections of scaffolding, platforms, and wire ropes in accordance with the OSHA requirements. Conduct the inspections each shift, and after any occurrence which could affect the structural integrity of the scaffolding or wire suspension ropes.

F. Air flow and Negative Pressure Measurement Log - Maintain, and make available for review by the Engineer, a log of air flow and negative pressure measurements.

G. Temporary Heating Units - If the use of temporary heating units was not anticipated at the time of the initial submittals, notify the Engineer at least one week in advance of use of heating units. Submit, for approval, information on fuel to be used and the safety measures to be employed for heater use and fuel
storage.

H. Waste Management

1. Waste Storage Logs – Maintain daily waste storage logs and make them available for inspection by the Engineer or environmental consultant.

2. Waste Analysis Reports

a) Direct the laboratory to send the original waste analysis test reports directly to the Engineer, with copies of the results to the Contractor. The reports must be issued no later than five (5) calendar days after the representative samples are submitted for testing, with a copy being sent by facsimile transmission to the Engineer the same day the report is sent.

b) The reports shall contain at a minimum the following information: the identity of the waste stream(s) analyzed, the number of samples collected and tested, dates of sampling and testing, laboratory test procedures utilized, the names and signatures of the individuals collecting the samples and conducting the laboratory tests, an interpretation of the test results, and chain-of-custody forms.

3. Waste Manifests and Disposal Documentation

a) Waste Manifest

(1) The Contractor shall prepare the Uniform Hazardous Waste Manifest for each shipment, including the LDR (Land Disposal Restriction) certification, which will be attached to the manifest. The Engineer will sign the Generator’s Certification on the manifest and maintain copies of the original manifest and signed copies upon completion of disposal.

(2) If the signed manifest is not received from the disposal facility within forty-five (45) days of shipment, as directed by the Engineer, the Contractor shall initiate the EPA Exception Report in accordance with 40 CFR 262.42, and take all steps necessary to locate the manifest or waste.

b) Disposal Certification – The Contractor shall provide a certification for each manifested shipment that the waste was accepted by the recycling or disposal facility, and properly treated and disposed of.
I. Daily and Final Project Clean-up

1. Maintain a log or report confirming the visual cleanliness of the jobsite each day, the cleanliness of containment prior to movement, and the more detailed testing of cleanliness (wiping with a cloth and inspecting for dislodged material) prior to dismantling, and cleanliness of contractor equipment prior to removal from the project site. Include the results of any wipe samples conducted on equipment by the environmental consultant.

2. Prepare a letter report presenting the results of the inspections conducted to verify the final cleanliness of the project site, surrounding property, waterways, equipment, buildings, and structures. Submit the report to the Engineer within one (1) week of the final inspection.

3. Include a summary of any problems or releases that occurred during the project, and the clean up and corrective action measures that were taken to resolve the problem.
APPENDIX B – TERMS AND DEFINITIONS

1. **Action Level** – Employee exposure, without regard to the use of respirators, to an airborne concentration in micrograms per cubic meter of air (μg/m³) calculated as an eight hour time-weighted average (TWA). The Action Level for lead is 30 μg/m³.

2. **Acceptance Criteria** – Minimum standards for the content of programs, plans, procedures, and designs required by this Specification for the performance of the Contract. Acceptance criteria will be the basis for judging the responsiveness of Contractors’ programs and will also be used as a basis for suspending work, if necessary.

3. **Agency** – New York City Department of Transportation (NYCDOT)


5. **CIH** – Certified Industrial Hygienist holding valid certification by the American Board of Industrial Hygiene (ABIH).

6. **Competent Person** – One who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them. The Competent Person is either an employee of the Contractor, or is under contract directly to the Contractor.

7. **Compliance Program** – A document prepared by the Contractor performing the removal of the lead-containing paint giving a detailed description of engineering controls, work practices, and safety precautions that will be adopted for the execution of the work. The Compliance Program is part of the overall Worker Protection Plan in this specification.

8. **Containment System** – A system which minimizes or prevents debris, generated during surface preparation or the removal of lead-containing paint, from entering into the environment, and which facilitates the controlled collection of the debris for disposal. It includes the cover panels, screens, tarpaulins, scaffolds, supports, and shrouds used to enclose entire work areas or the paint removal tools. Containment systems may also employ the use of ground covers or water booms.

9. **Contractor** – The person or corporate body that is party to the contract and bound to execute the work in accordance with the contract.

10. **Discharge** – Accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous material, waste water or waste into or on any land, water or airspace.
11. **Disposal** – The discharge, deposit, injection, dumping, spilling, leaking or placing of any solid or hazardous waste into or on any land or water, so that no solid waste or hazardous waste, or any constituent thereof, may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

12. **Disposal Facility** – A licensed facility where hazardous and non-hazardous waste is intentionally placed, and in which the waste will remain after closure.

13. **Emission** - A release of material to the air, water, or ground.

14. **Employee Lead Exposure** – Exposure which would occur if the employee were not using a respirator.

15. **Engineer** – The designated NYCDOT employee, or authorized representative, who is responsible for the project including the authority to accept or reject Work on behalf of the Agency.

16. **Engineering Controls** – The use of technologically feasible controls in the work areas for the purpose of reducing and maintaining employee exposure to lead to or below the PEL, and for controlling emissions from the work area. Examples of engineering controls are mechanical ventilation for enclosures, or methods which capture the dust at the point of generation such as vacuum blast cleaning.

17. **Environmental Consultant** – Individual or company employed by the NYCDOT on a periodic or full time basis to monitor the lead removal project to assure that it is conducted in an environmentally protective manner in accordance with the provisions of this specification and the contract documents.


19. **EPA Hazardous Waste Number** – The Federal number assigned to each hazardous waste. The number assigned to lead waste is D008.

20. **Flood Plain** – A flat, low-lying portion of a stream valley subject to periodic (50 to 100 years) inundation during a flood.

21. **Generator** – Any facility owner, operator or person whose act or process produces hazardous waste or whose act first causes a hazardous waste to become subject to regulation. The NYCDOT and Contractor are co-generators for the work under this Specification. The NYCDOT will obtain the EPA ID Number.

22. **Hazardous Waste (lead paint debris)** – Waste that is classified as hazardous due to its concentrations of regulated hazardous substances. Wastes may be classified as hazardous based on the characteristics of toxicity, ignitability, corrosivity, and reactivity. Paint debris is typically classified as hazardous waste based on the characteristic of toxicity.
This is determined by testing representative samples of the waste using the Toxicity Characteristic Leaching Procedure (TCLP). If the leachate contains any of the eight metals or other substances in concentrations at or above limits established in 40 CFR 261, Identification and Listing of Hazardous Wastes, it is classified as hazardous.

23. **HEPA** – A high efficiency particulate air filter (HEPA filter) removes from the air 99.97% or more of the aerosols having a diameter of 0.3 microns.

24. **Ignitability** – A characteristic of waste that causes it to be classified as hazardous. Waste is determined to be ignitable if it is found to be capable of being set afire, or of bursting into flame spontaneously or by interaction with another substance or material, when tested in accordance with 40 CFR 261. Spent solvents and liquid paint waste typically fall into this category.

25. **Leachate** – The amount of a specific substance (e.g., lead) that is carried off or dissolved out of a material. The amount of leachable lead that classifies paint debris as being hazardous is 5 mg/L (ppm) when tested by TCLP.

26. **Lead** – Metallic lead, all inorganic lead compounds, and organic lead soaps. The lead pigments used in paints comply with this definition.

27. **µg/m³** – Micrograms per cubic meter. Common units for reporting airborne concentrations of lead and other aerosols.

28. **mg/L** – Milligrams per liter. Common units for reporting a concentration of a specific substance in units of mass per volume (e.g., amount of hazardous material contained in paint debris).

29. **MSDS** – Material Safety Data Sheet. Data provided by the manufacturer of a product that identifies the hazardous constituents contained in the product together with precautions that need to be taken during its handling and use.

30. **NAAQS** – National Ambient Air Quality Standards. Federal regulations which establish limits on allowable pollutants in the ambient air. Lead and particulate matter are included. Regulations are found in 40 CFR 50.


33. **Owner** – New York City Department of Transportation (NYCDOT)

34. **Paint Removal Waste** – Removed paint particles combined with the material (e.g., abrasives) used to remove the paint. Recyclable steel grit is also considered a paint
removal waste once it has been used for the paint removal operation.

35. **Permissible Exposure Limit (PEL)** – Employee exposure, without regard to the use of respirators, to an airborne concentration in micrograms per cubic meter of air (µg/m³), calculated as an eight hour time-weighted average (TWA). The PEL for lead is 50 µg/m³ as an 8 hour TWA. If an employee works for longer than 8 hours in a given day, the PEL is reduced using the following formula:

Adjusted PEL = (PEL x 8) ÷ (hours worked in the day)

36. **PM-10** – Particulate matter of an aerodynamic equivalent diameter of 10 microns or less. PM-10. Term associated with the collection of airborne particulate using high volume ambient air samplers.

37. **POTW** – Publicly Owned Treatment Works (e.g., waste water treatment facility).

38. **PPM** – Parts per million. Common units for reporting a concentration of a specific substance (e.g., amount of hazardous material contained in paint debris).


40. **Regulated Area** – Area established by the Contractor, outside of which the airborne concentrations of lead or other toxic material can reasonably be expected to not exceed the corresponding Action Level.

41. **Representative Sample** – A sample of debris from a pile, drum, or container of debris which can be expected to exhibit the average properties of that pile, drum, or container of debris.

42. **SSPC** – The Society for Protective Coatings. An independent, non-profit organization of engineers, technical specialists, and contractors whose goal is research and development of new coatings and methods for removal, application, and disposal of existing coatings on industrial structures.

43. **TCLP** – Toxicity Characteristic Leaching Procedure. Laboratory tests conducted on wastes that determine the amount of hazardous materials that leach out into a test solution. The test is intended to simulate the properties of water as it leaches through a solid waste landfill. TCLP testing is defined in 40 CFR 261, Appendix II.

44. **Threshold Limit Value (TLV)** – The time-weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed day after day, without adverse effect.
45. **Time Weighted Average (TWA)** – The average concentration of a contaminant in air during a specific time period.

46. **Treatment** – Any method or process designed to change the physical, chemical or biological characteristics or the composition of any hazardous waste so as to render such waste non-hazardous.

47. **Treatment, Storage, and Disposal (TSD) Facility** – The TSD facility is the last phase of the cradle-to-grave concept in handling hazardous waste, and is responsible for its proper disposal. Requirements are found in 40 CFR 264 and 265.

48. **TSP** – Total Suspended Particulate. Term associated with the collection of airborne particulate using high volume ambient air samplers. Filters are typically analyzed for lead.

49. **Waste Stream** – A waste stream represents debris of a similar type, make up, and process. The paint debris from a given structure represents a single waste stream if the coating system and method of removal is constant. The debris represents a different waste stream, if different coating materials or methods of removal are involved. For example, the waste created when using recycled steel grit generates a different waste stream than waste created using a disposable abrasive (e.g., Black Beauty) even though the paint being removed is the same. The waste stream consists of the abrasive material, removed paint particles and any other materials generated during the paint removal process.

50. **Worker Protection Plan** – Comprehensive plan addressing the steps that will be taken to protect the health and safety of Contractor workers from jobsite hazards.

51. **Ventilation System** – Ventilation systems include both natural ventilation and artificial ventilation (mechanical fans, hoods, and ductwork), to provide air movement across the work area, and dust collectors to clean the air stream prior to discharge.

52. **Visible Emissions** – Emissions of particulate from the work area that are visible to the unaided eye. EPA methods for assessing visible emissions are found in 40 CFR 60, Appendix A. Method 9 determinations are based on the opacity of the emissions. Method 22 is based on total visible emissions regardless of the opacity.
APPENDIX C

Insert copy of NYSDOT Safety Bulletin SB-94-4, Histoplasmosis
### Table 1

**Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand Tool Cleaning</td>
<td>3P</td>
<td>Rigid or Flexible</td>
<td>Penetrable</td>
<td>Minimal</td>
<td>Partially Sealed</td>
<td>Open Seam</td>
<td>Natural</td>
<td>Not Reqd</td>
<td>Not Reqd</td>
</tr>
<tr>
<td>Power Tool Cleaning w/ Vacuum</td>
<td>3P</td>
<td>Rigid or Flexible</td>
<td>Penetrable</td>
<td>Minimal</td>
<td>Partially Sealed</td>
<td>Open Seam</td>
<td>Natural</td>
<td>Not Reqd</td>
<td>Not Reqd</td>
</tr>
<tr>
<td>Power Tool Cleaning w/o Vacuum</td>
<td>1P</td>
<td>Rigid or Flexible</td>
<td>Rigid or Impenetrable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Resealable</td>
<td>Mechanical</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Chemical(^1) Stripping Hand Remv</td>
<td>3C</td>
<td>Rigid or Flexible</td>
<td>Chemical Resistant</td>
<td>Minimal</td>
<td>Partially Sealed</td>
<td>Open Seam</td>
<td>Natural</td>
<td>Not Reqd</td>
<td>Not Reqd</td>
</tr>
<tr>
<td>Chemical(^1) Stripping Wet Remv</td>
<td>2C</td>
<td>Rigid or Flexible</td>
<td>Chemical and Impermeable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Overlapping</td>
<td>Natural</td>
<td>Not Reqd</td>
<td>Not Reqd</td>
</tr>
<tr>
<td>Water Methods(^5)</td>
<td>2W</td>
<td>Rigid or Flexible</td>
<td>Impermeable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Overlapping</td>
<td>Natural</td>
<td>Not Reqd</td>
<td>Not Reqd</td>
</tr>
<tr>
<td>Vacuum Blasting</td>
<td>4A</td>
<td>Rigid or Flexible</td>
<td>Penetrable or Impenetrable</td>
<td>Minimal</td>
<td>Partially Sealed</td>
<td>Open Seam</td>
<td>Natural</td>
<td>Not Reqd</td>
<td>Not Reqd</td>
</tr>
<tr>
<td>Wet Abrasive Blasting(^7)</td>
<td>1W</td>
<td>Rigid or Flexible</td>
<td>Impenetrable &amp; Impermeable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Resealable</td>
<td>Mechanical</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Abrasive Blast Cleaning(^7)</td>
<td>1A</td>
<td>Rigid or Flexible</td>
<td>Impermeable</td>
<td>Rigid or Flexible</td>
<td>Fully Sealed</td>
<td>Airlock or Resealable</td>
<td>Mechanical</td>
<td>Required</td>
<td>Required</td>
</tr>
</tbody>
</table>

1. This table provides general design criteria only. Other combinations of materials may provide controls over emissions equivalent to those combinations shown above.

2. The SSPC Classification is based on SSPC Guide 6. Note that for work over water, water booms or boats with skimmers should be employed, where feasible, to contain spills or releases. Debris must be removed daily at a minimum.
Permeability addresses both air penetrability and water permeability as appropriate. In the case of water or chemical removal methods, the containment materials must be resistant to both chemicals and water. Ground covers should always be impermeable, and of sufficient strength to withstand the impact and weight of the debris and the equipment used for collection and clean-up.

Ground covers must always be impermeable and of sufficient strength to withstand the weight and impact of the debris and the equipment used for cleaning. When tarpaulins are used, install plywood above or below the tarpaulins as necessary to prevent perforation. If debris escape through the seams, then additional sealing of the seams and joints is required. All containment materials and materials used for sealing must be resistant to both chemicals and water. If unacceptable worker exposures to lead or other toxic metals occurs, incorporate a ventilation system.

This method applies to high pressure water jetting without abrasives. Ground covers and the lower portions of the containment must be of sufficient strength and integrity to facilitate the collection and holding of the water and debris for proper disposal. Ventilation is not required provided the emissions are controlled as specified in this Section, and provided worker exposures are properly controlled. If unacceptable worker exposures to lead or other toxic metals occurs, incorporate a ventilation system into the containment.

This method applies to any methods which combine water with abrasives. Ground covers and the lower portions of the containment must be of sufficient strength and integrity to facilitate the collection and holding of the water and abrasive/paint debris for proper disposal.

Ground covers must be of sufficient strength to withstand the impact and weight of the abrasive and the equipment used for cleaning. Ground covers must also extend beyond the containment boundary to capture escaping debris.
NYCDOT DIVISION OF BRIDGES:
Rehabilitation of SI Ferry Ramps

EXHIBIT J
MEETING MINUTES / CORRESPONDENCE
WITH AFFECTED AGENCIES
# LIST OF INCLUDED DOCUMENTS

<table>
<thead>
<tr>
<th>Document Description (Date)</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Minutes of Mtg. w/ SIRTOA (11/1/05)</td>
<td>3 Pages</td>
</tr>
<tr>
<td>2. Minutes of Meeting w/SIRTOA (4/11/06)</td>
<td>5 Pages</td>
</tr>
<tr>
<td>3. Minutes of Mtg. w/SIRTOA &amp; NYCT (5/11/06)</td>
<td>4 Pages</td>
</tr>
<tr>
<td>4. Minutes of Field Mtg. w/SIRTOA &amp; NYCT (6/30/06)</td>
<td>4 Pages</td>
</tr>
<tr>
<td>5. Minutes of Mtg. w/NYCT Buses (10/20/06)</td>
<td>5 Pages</td>
</tr>
<tr>
<td>6. Minutes of Meeting w/SIRTOA (11/17/06)</td>
<td>6 Pages</td>
</tr>
<tr>
<td>7. Notes from Mtg. w/Ferries (12/8/06)</td>
<td>1 Page</td>
</tr>
<tr>
<td>8. Minutes of Mtg. w/Highway Design and Construction (2/16/07)</td>
<td>4 Pages</td>
</tr>
<tr>
<td>9. Minutes of Mtg. w/Parking Bureau (3/5/07)</td>
<td>5 Pages</td>
</tr>
<tr>
<td>10. Minutes of Mtg. w/Ferries &amp; Parking (3/15/07)</td>
<td>3 Pages</td>
</tr>
<tr>
<td>11. Minutes of Mtg. w/Highway Design, Parking and Taxis (4/2/07)</td>
<td>4 Pages</td>
</tr>
<tr>
<td>12. Minutes of Mtg. w/NYCT Outside Projects (5/10/07)</td>
<td>3 Pages</td>
</tr>
<tr>
<td>13. Minutes of Mtg. w/NYCDOT Bridge Painting Unit (5/24/07)</td>
<td>3 Pages</td>
</tr>
<tr>
<td>14. Memorandum of Understanding – Bridge Lighting (1/31/07)</td>
<td>1 Page</td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Mr. Samuil Kolta (MTA - SIR)  
FROM: Ms. Theresa Fallon  
DATE: November 7, 2005  
SUBJECT: St. George Staten Island Ferry Terminal Ramp Rehabilitation  

TO: A. Sorrentino (SIR – MOW)  
COPYES TO: C. Sklavounakis (NYCDOT)  

Project: New York City Department of Transportation  
       Engineering Service Agreement for  
       Design & Resident Engineering Services  
       Contract No.: HBR1217  
       NYC PIN: 84199MBBR594  
       Stage II Project Agreement – No. 00C-18  

Meeting: NYCDOT In-Depth Inspection - Kick-Off Meeting w/SIR  
Date & Time: November 1, 2005 @ 1:15 PM  
Place: MTA – SIR Offices at 60 Bay Street, 5th Floor, SI, NY 10301  
Attendees: Samuil Kolta – SIR  
           Nikolaos Ikonomidis – SIR  
           Kevin Benson - SIR  
           Ronald Rauch – NYCDOT  
           Theresa Fallon – WAI  

The meeting was held to discuss Weidlinger’s needs for track access and flagging services to perform the in-depth inspection of the 8 ramp structures located above and adjacent to the SIR’s St. George Staten Island Ferry Terminal Station. Weidlinger is performing this work under the above referenced Engineering Service Agreement for NYCDOT’s Design Build/Emergency Contracts Division of Bridges.

The items discussed at the meeting were as follows:

1. Weidlinger distributed two aerial photos (one of the Bus Station Ramps and one of the North Ramp) which highlighted the areas where track access was needed to perform the inspection. Additionally, Weidlinger provided an estimate of how many days of flagging was anticipated for each highlighted area. This estimate was based on what was used during previous biennial inspections and assumed a workday would be equivalent to 4 hours. The total estimate of days based on these assumptions was 30 days.
2. SIR stated that the work day is typically 6 hours (from 9:00 am to 3:00 pm) so the actual number of days could potentially be reduced to 5 weeks (or possibly even less depending on how smoothly the work goes).

3. SIR stated that WAI needs to contact SIR – Maintenance of Way (MOW) Division for work that occurs directly on the track. The contact is Al Sorrentino at (718) 876-8265 and they are located at 293 Bay Street. It will be necessary to have the Auto Shop inspect the High Rail equipment prior to the inspection (contact Al to arrange this). Additionally MOW must be notified directly for work on the track since they are responsible for supplying personnel for this type of work.

4. WAI informed SIR that the inspectors who will be performing the work have taken the Safety Training Class. Their names and cell phone contact numbers are:
   
   Harry Shah (973) 713 -9767 – Team Leader
   George Koss (973) 270-8061 – Asst. Team Leader

5. WAI has submitted the railroad insurance certificate to Miron Kuchuk at NYC-Transit but it has not been formally approved. WAI will follow up and have Miron contact Sam Kolta directly to let him know when it is approved.

6. SIR stated that request for tracks/flagging services must be made directly to Sam Kolta (preferably by e-mail) with a copy to Nikolaos Ikonomidis by noon on Tuesday for work the following week. SIR will inform WAI as to whether their requests can be accommodated on Wednesday the following day.

7. If WAI needs to cancel a track outage or a flagger they must notify SIR (Sam with Nick copied) by 1:00pm the previous day.

8. SIR stated that in the case of platform closure the tracks on either side of the platform would be taken out of service for the entire day. Also flaggers will be provided by SIR during platform closures.

9. SIR reminded WAI to use fiberglass ladders (no metal parts) and either fiberglass measuring tape or wooden rulers in the track area.

10. SIR requested that WAI inspectors remove any debris that might fall during the inspection (e.g. flakes of deteriorated steel, pieces of concrete, etc.).

11. WAI anticipates beginning work the week of the November 14, 2005. Work will begin at the North Ramp, then move to the station (track work only) and then under the Ramps near the tunnel. Anticipate coming back to do the station platforms with a scissor lift at the end of the inspection.
12. SIR requested that Weidlinger inspectors wear their ID’s/PPE at all times while on SIR property.

13. Subsequent to the meeting SIR informed Weidlinger that due to scheduling conflicts, track access/flagger will not be available until November 21, 2005. Weidlinger will revise inspection schedule to do non-track related work until that time.

Subsequent to the meeting Kevin Benson (SIR) escorted WAI personnel (Theresa Fallon, Harry Shah and George Koss) and Ron Rauch of NYCDOT around the station area to get a better understanding of the accessibility issues.

ACTION ITEMS:

1. WAI to contact MOW and get High rail equipment inspected. Subsequent to the meeting WAI contacted MOW and made tentative arrangements to have the High Rail vehicle inspected the week of November 7, 2005.

2. WAI to follow up with Miron Kuchuk to check on status of insurance approval. Subsequent to the meeting WAI contacted Miron Kuchuk and resolved outstanding insurance issues. Insurance was approved by Miron Kuchuk as of November 7, 2005.
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)
FROM: Ms. Theresa Fallon
DATE: April 19, 2006
SUBJECT: St. George Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation
        Engineering Service Agreement for
        Design & Resident Engineering Services
        Contract No.: HBR1217
        NYC PIN: 84199MBBR594
        Stage II Project Agreement – No. 00C-18

Meeting: SIRTOA Coordination Meeting No. 1
Date & Time: April 11, 2006 @ 1:30 PM
Place: SIRTOA Offices, 5th Floor, 60 Bay Street, Staten Island, NY 10301
Attendees: See attached list

The meeting was held to discuss the proposed scope of work for the future design/build contract and SIRTOA’s requirements for work above/adjacent to their tracks as well as initiating the process for setting up the Force Account for the design/build project. Specific items discussed were as follows:

1) Chris Sklavounakis (NYCDOT) began the meeting by giving an overview of the scope and schedule of the future design/build contract. In general the design/build contract will be a major rehabilitation/reconstruction project with an estimated budget of $150 million that will include complete deck replacement (on most of the bridges), superstructure repair/modifications, cleaning and painting of structural steel, upgrading of the bridge lighting system, complete replacement of the bridge drainage system, installation of a pigeon deterrent system and total reconstruction of the North Ramp on a new alignment. The schedule for the project is to advertise the design/build contract in the late fall of 2006 and award the contract by fall 2007 with the intention of starting construction sometime between spring and fall of 2008. Considering the site constraints and access issues the estimated construction duration is approximately 3 years.

2) SIRTOA requested if at all possible that underbridge lighting be included in the project. Sam Kolta (SIRTOA) stated that they would agree to maintain the system once installed. NYCDOT directed WAI to include underbridge lighting in the project scope. Peter
Argenziano (SIRTOA) provided NYCDOT/WAI with a sketch showing which lights are currently not working.

3) Sam Kolta (SIRTOA) stated there is a major track project (St. George Track and Signal System Replacement) scheduled to begin at the same time (September, 2008) as the design/build ramp contract. He recommended that NYCDOT/WAI contact Stanley Kwa, Lead Designer for this project (646) 252-3189, to coordinate scope and schedules. In particular there needs to be discussions as to how to handle the installation of the new bridge drainage system. It was suggested that it might make more sense to have the Contractor for the interlocking project install the underground drainage pipes while he is replacing the tracks and then just have the design/build ramp Contractor tie into them with the new above ground portion of the system. Sam Kolta also provided NYCDOT/WAI with a copy of the CPM Master Plan for the St. George Track and Signal Replacement Project.

4) SIRTOA stated that complete replacement of the drainage system is necessary since much of the existing system is completely blocked with concrete from a previous rehabilitation project in the 80s. WAI offered to provide whatever plans they have on the existing system.

5) Theresa Fallon (WAI) presented the proposed scope of work for each bridge (concentrating on those areas/items that would affect the Railroad)

**Ramp A** – Complete Superstructure Replacement / Abutment Repair (single span over Tracks 1 & 2)
- SIRTOA stated that this area is very critical to their operations (down to just two tracks at the mouth of the tunnel) so they would require a substantial shielding system to be installed before demolition could proceed.
- Shielding would be installed during either daytime (9am to 3pm) or weekend (Fri. 9pm to Mon. 4am) work windows. Once shielding is in place Contractor could work continuously.
- Shielding would need to provide 7’-6” horizontal clearance to centerline of tracks and 16’-0” vertical clearance (WAI to contact Kevin Benson (SIRTOA) to arrange time to have surveyors check vertical clearance under Ramp A)

**Ramp B** - Complete Deck Replacement, Superstructure Modifications/Repair, Cleaning and Painting Existing Steel, Abutment Repair and Bearing Replacement (Primarily just first three spans are over tracks)
- Temporary shielding would be required for deck removal work but it could be installed between existing beam flanges (i.e no vertical clearance issues)
- Proposed scope (for all bridges) is to remove existing lead paint prior to painting so a full containment system will need to be installed. This will require significant flagging services and track outages, it is anticipated that much of the work will have to be done at night and on weekends.
• It is anticipated that a temporary bridge will be constructed from Richmond Terrace to Bus Station South in order to close Ramp B during deck replacement work. Construction of this temporary bridge would require additional flagging services/track outages while working over SIRTOA’s tracks.

**Ramp C** - Abutment Repair and Bearing Replacement, Possible Superstructure Repair, Cleaning and Painting Existing Steel (All three spans are over RR ROW)

**Ramp D** – Possible Complete Deck Replacement, Abutment Repair and Bearing Replacement, Superstructure Repair, Cleaning and Painting Existing Steel, Pigeon Deterrent System (First five spans are over RR ROW)

**Bus Station North** – Possibly Complete Deck Replacement (but more likely partial in areas over terminal and subway station, Superstructure Modifications/Repairs, Cleaning and Painting Existing Steel, Pigeon Deterrent System (Majority of work will be over RR ROW)

**Bus Station South** – Complete Deck Replacement, Superstructure Modifications/Repairs, Cleaning and Painting Existing Steel, Pigeon Deterrent System (Majority of work will be over RR ROW)

• SIRTOA requested that WAI contact the pigeon deterrent vendor to see if their system has been used near electrified tracks. *(Subsequent to the meeting WAI contacted Avian Flyaway and spoke with Richard Selzer about their system. He said it has been used by NYC Transit – most recently at the new Stillwell Station in Coney Island. He will be in the area sometime in late April, early May for another project and offered to meet with WAI at the site to discuss installation issues. WAI will contact SIRTOA/NYCDOT about attending this field meeting after Mr. Selzer finalizes his trip schedule)*

**Old Viaduct** – Complete Encasement Removal, Limited Areas of Full Depth Deck Replacement, Steel Repair (as needed), Cleaning and Painting Existing Steel, Substructure Repair and Bearing Replacement (All spans are over RR ROW and contractor will need access to SIR Storage areas)

• SIRTOA concurred that removing the concrete encasement would be worthwhile since falling concrete has been an ongoing safety problem at this bridge

• SIRTOA also requested that the fence be re-installed along the north fascia of the bridge (it was removed under the Skanska terminal project). WAI/NYCDOT stated that fencing as well as an approved vehicular barrier (the existing one does not currently meet code) would be added under the design/build contract.
**North Ramp** — Demolition of Existing Structure, Modification to Existing Abutment, Relocation of Platform Stairs, Construction of New Bridge (Only the first span will be over RR ROW)

- SIRTOA expressed concern regarding relocation of the stairway to the stadium platform. There are code restrictions regarding clearances (5’ min.) to the edge of platform that needs to be maintained. WAI to contact Kevin Benson to arrange access for surveyors.

6) Issues discussed regarding setting up the Force Account included:

- Sam Kolta stated NYCDOT/WAI needed to contact Mr. Rajen Udeshi of NYC Transit – Outside Projects ((646) 252-3673) to set up the Force Account. He recommended that all submissions be formally made to Mr. Udeshi’s Office but with a copy to his office in order to expedite the review process.
- Sam Kolta also reminded NYCDOT/WAI that the design/build contractor’s inspection time should also be considered in the Force Account estimate.
- SIRTOA stated NYCDOT/WAI should prepare a fairly detailed scope and schedule for track related work prior to meeting with Outside Projects so that a worthwhile estimate could be generated.
- SIRTOA provided Chris Sklavounakis (NYCDOT) with a rate schedule for various railroad services (e.g. per hour cost of flaggers, etc.) to assist in estimating the preliminary Force Account budget.

7) At the conclusion of the meeting WAI provided SIRTOA with two draft sets of utility drawings that have been prepared for this project. The drawings primarily show just those utilities that are bridge mounted. (WAI will send SIRTOA the AutoCad files for these drawings on CD.)

**ACTION ITEMS**

- WAI to prepare write-up of the Railroad’s requirements for insurance, track safety and standard procedures for working on their ROW (e.g. requesting flagging services/track outages, equipment inspection, work windows, etc.) for their review and ultimate inclusion in the bid package.
- WAI to prepare written scope and schedule for work requiring railroad services to be used by NYC Transit - Outside Projects and SIRTOA to estimate the amount of the Force Account that should be set-up for this project.

**NEXT MEETING**

Meeting with NYC Transit – Outside Projects to discuss setting up the Force Account for this Project is scheduled for May 11, 2006 at 10:00 am in their offices at 2 Broadway. WAI will contact all parties once the conference room location has been confirmed.
# MEETING REGISTER

MTA STATEN ISLAND RAILWAY

**Date:** April 11, 2006

**Location:** 60 Bay Street, 5th Floor C.F.

**Subject of Meeting:** NYC DOT Bus Ramp Rehabs Project Coordination Meeting

<table>
<thead>
<tr>
<th>NAME</th>
<th>AGENCY &amp; TITLE</th>
<th>AREA CODE &amp; TEL. NO.</th>
<th>FAX NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Ikem-Oniobi</td>
<td>MTA/ASSIST D18 - 516-554-1588</td>
<td>718-816-8472</td>
<td>(718) 876-8558</td>
</tr>
<tr>
<td>Peter Asganov</td>
<td>SIR</td>
<td>718-876-8256</td>
<td>718-876-8256</td>
</tr>
<tr>
<td>Kevin Benson</td>
<td>SIR</td>
<td>718-876-8291</td>
<td>718-876-8285</td>
</tr>
<tr>
<td>John Russell</td>
<td>SIR</td>
<td>718-876-8249</td>
<td>718-876-8258</td>
</tr>
<tr>
<td>S. Kalpa</td>
<td>SIR</td>
<td>718-876-8252</td>
<td>718-876-8258</td>
</tr>
<tr>
<td>A. W. Olearo</td>
<td>SIR</td>
<td>718-876-8265</td>
<td>718-876-8346</td>
</tr>
<tr>
<td>T. Fallon</td>
<td>Weilburger</td>
<td>973-541-9800</td>
<td>973-541-9780</td>
</tr>
<tr>
<td>Patrick Nestor</td>
<td>NYC DOT - Bridges</td>
<td>212-727-2672</td>
<td></td>
</tr>
<tr>
<td>H. Miracolo</td>
<td>Weilburger</td>
<td>973-541-7200</td>
<td>973-541-7780</td>
</tr>
<tr>
<td>Chris Sklavenakis</td>
<td>NYC DOT</td>
<td>212-788-2078</td>
<td>212-788-1914</td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)
FROM: Ms. Theresa Fallon
DATE: May 18, 2006
SUBJECT: St. George Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation Engineering Service Agreement for Design & Resident Engineering Services
Contract No.: HBR1217
NYC PIN: 84199MBBR594
Stage II Project Agreement – No. 00C-18

Meeting: SIRTOA/NYCT Coordination Meeting No. 2
Date & Time: May 11, 2006 @ 10:00 AM
Place: NYCT Offices, 7th Floor, 2 Broadway, New York, NY 10301
Attendees: See attached list

The meeting was held to discuss the proposed scope of work for the future design/build contract and SIRTOA/NYCT’s requirements for work above/adjacent to their tracks as well as initiating the process for setting up the Force Account for the design/build project. Specific items discussed were as follows:

1. Chris Sklavounakis (NYCDOT) explained to the Railroad that the proposed work for this project would be done under a Design/Build Contract that is currently scheduled to be advertised in the late fall of 2006. NYCDOT needs to have the Force Account (FA) Agreement in place prior to advertisement so the bidders can evaluate the adequacy of the FA budget to cover the work as they see it based on their proposed design/construction approach. (The FA budget will be based on preliminary engineering estimates provided by WAI and it will assume that the DB contractor does work in such a manner that he affects one track at a time; final design will be done after contract award; final design will be done after contract award.) If in the bidder’s estimation the value established in the FA Agreement between the City and the Railroad is insufficient they are to give a price at the time of their bid (it will be a separate line item in the contract price proposal) for the amount above and beyond the Force Account budget for additional railroad provided services. These costs above and beyond the original FA will be paid by the City directly to the Railroad out of the D/B contract budget so there will be no need to set-up a separate Force Account with the Contractor.
2. Theresa Fallon (WAI) distributed a preliminary estimate of anticipated number of weekday, weeknight, and weekend flagging/pilot work shifts broken down by bridge and task (for both design and construction). The estimate conservatively assumed no overlap in shared flagging services between bridges.

3. Sam Kolta (SIRTOA) stated that the preliminary estimate provided by Weidlinger only considered time for Flaggers and Pilots however there will also be a need for 3rd Rail Maintainers, Equipment Maintainers and Signal Maintainers. Miron Kuchuk (NYCT) stated that his estimate will be broken down into three categories: Flagging Services (cost to provide flaggers and pilots (when working with track mounted equipment), Access Protection (cost to provide 3rd rail, signal and equipment maintainers) and General Order (cost to take a track out of service).

4. Sam Kolta (SIRTOA) stated he needed to verify whether the costs for engineering related tasks could be waived (e.g. inspection, surveying, etc.).

5. Sam Kolta (SIRTOA) stated that it is very likely that the majority of the painting work would have to be done during weekend windows since it would be difficult to set-up a containment system and blast clean within a daytime or even nighttime window. WAI responded that there are a lot of columns/areas you could leave the containment system up between shifts (e.g. platforms) without affecting service so this could realistically be done during daytime but preferably nighttime shifts. However for the columns located within the interlocking (i.e. not the station) it was assumed that all these would be done during weekend shifts. In some cases the column/track clearance is so limited that it may be necessary to consider just overcoating (i.e. limited lead paint removal) or encapsulation. Sam Kolta (SIRTOA) stated that the Railroad would prefer full lead abatement but understands that in some isolated cases it may not be possible.

6. Sam Kolta (SIRTOA) stressed that the Contractor should be made aware that the review time for getting his Lead Health and Safety Plan approved by the NYCT – Office of System Safety will take a minimum of 60 days. Chris Sklavounakis (NYCDOT) stated that this will be clearly stated in the bid documents.

7. Sam Kolta (SIRTOA) stated that all reviews / approval requests should be thru Rajen Udeshi's (RU) office (NYCT - CPM outside Projects). RU will distribute the documents as needed. To expedite the process, copies of these same submittal documents should be forward to his office for SIRTOA's review or to follow up with RU on other NYCT Division's review/approval.

8. Theresa Fallon (WAI) stated that she would prepare a document for SIRTOA's review that details the various procedural requirements that the D/B contractor will need to comply with before and/or during design and construction. This will include but is not limited to the following:
   - Safety Training (w/assistance from Miron Kuchuk (NYCT))
• RR Insurance (w/assistance from Miron Kuchuk (NYCT))
• Inspection of Equipment by MOW shop
• Flag requesting/canceling procedures
• Company Photo ID to be worn at all times
• Book of Safety Rules (to be provided by Sam Kolta (SIRTOA))

9. Theresa Fallon (WAI) requested, if at all possible, drawings showing the existing and proposed track layout for the St. George Interlocking. Sam Kolta (SIRTOA) stated that he would see what is available. *Subsequent to the meeting Sam Kolta (SIRTOA) faxed WAI a plan showing the exiting track layout.*

10. Rick Halezli (WAI) inquired as to whether the current codes require exposed steel over tracks to be treated with a fire retardant since the new beams over Tracks 8 & 9 installed by Skanska were treated with a fire retardant. Sam Kolta (SIRTOA) stated he would look into this but recommended that NYCT-Office of System Safety be contacted regarding issues such as the spraying of fire retarding materials on structural members or with any other safety issue that may arise.

11. Sam Kolta (SIRTOA) inquired as to whether the City/WAI had any survey information available for the parking lot north of the stadium. WAI responded that the only survey done specifically for this project was for the EDC parking lot immediately south of the stadium. *(The AutoCad file containing this survey information was e-mailed to Stanley Kwa (NYCT) earlier today). However, WAI is currently trying to get the as-built drawings for the stadium project from EDC so the information SIRTOA needs may be in there. Theresa Fallon (WAI) will follow-up with Sam Kolta (SIRTOA) once they drawings are received.*

12. Miron Kuchuk (NYCT) stated that he should have an estimate for the Force Account ready by the end of June and requested WAI e-mail him a scanned version of the overall color-coded site plan provided at the meeting.

13. Sam Kolta (SIRTOA) requested that the bid documents stress the critical importance of maintaining access into and out of the west portal of the St. George tunnel. Bidders need to understand that their work must be designed and constructed in such a manner as to ensure at least one track is operational at all times.

**NEXT MEETING**

No date was set up at this time but likely sometime at the end of June once SIRTOA and NYC Transit have had time go over the information provided and prepare their estimate.
S1 Ferry Rehab Mtq - PA Att.
Meeting Sign - In Sheet
May 11th, 2020 at 10:00
NYCT 2 Broadway

<table>
<thead>
<tr>
<th>Name</th>
<th>Company / Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theresa Fellow</td>
<td>Klei trimper 973-541-9800</td>
</tr>
<tr>
<td>Rich Malczew</td>
<td>WEID LIN 002 973-581-9800</td>
</tr>
<tr>
<td>Chris Sklavenakis</td>
<td>NYCDOT 212-788-2078</td>
</tr>
<tr>
<td>Patrick Nesfor</td>
<td>NYCDOT 212-788-2078</td>
</tr>
<tr>
<td>Felix Norman</td>
<td>NYCT Transit 646-255-3665</td>
</tr>
<tr>
<td>Samuel G. Kolta</td>
<td>MTA 718 (876) 8252</td>
</tr>
<tr>
<td>William Kucharah</td>
<td>NYC/Opera 646-255-3653</td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Mr. Patrick Nestor (NYCDOT)
FROM: Ms. Theresa Fallon
DATE: July 7, 2006
SUBJECT: St. George Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation
Engineering Service Agreement for
Design & Resident Engineering Services
Contract No.: HBR1217
NYC PIN: 84199MBBR594
Stage II Project Agreement – No. 00C-18

Meeting: SIRTOA/NYCT Coordination Meeting No. 3
Date & Time: June 30, 2006 @ 1:30 PM
Place: St. George, Staten Island Ferry Terminal
Attendees: See attached list

The objective of the meeting was to view the work site and discuss the proposed scope of work for the future design/build contract as it relates primarily to cleaning and painting of structural steel adjacent to and over SIRTOA’s tracks. Specific items discussed were as follows:

1. Theresa Fallon (WAI) briefly described the proposed scope of work and envisioned sequence of construction for Bus Station North and South (i.e. the structures over the St. George Station). It is anticipated that the Contractor will set-up scaffolding over the tracks that can be used as both a catch system for deck removal and a containment system for lead paint removal. Once the deck has been removed the Contractor could work from the top side without impacting SIR services. The current scope of work calls for 100% lead paint removal (most likely by sand blasting) with isolated miscellaneous steel repairs and possible connection modifications but no major steel replacement anticipated. After steel repair work is complete the Contractor would paint the structure, replace the deck and remove scaffolding. After the entire structure is painted a subcontractor would come in to install an electrified pigeon deterrent system along the bottom flanges of the steel framing (this could be done from man-lift equipment on the platforms). WAI stressed that the specific details and sequencing of work are to be proposed and designed by the D/B Contractor and submitted to NYCDOT/SIRTOA (as well as any other impacted agencies) for review and approval.
2. Nikolaos Ikonomidis (SIRTOA) stated that any scaffolding left in-place should provide a minimum of 16'-6" of vertical clearance over the top of rail and a minimum of 7'-0" of horizontal clearance from the centerline of tracks. A minimum of 5'-0" of horizontal clearance must be maintained to the edge of a platform. He also stated that the Contractor should be made aware that the scaffolding should be designed/detailed to prevent any construction debris from falling through, keep rain water off the platforms when the deck is off and where needed provide temporary platform lighting should the scaffolding be lower than the existing lighting. All temporary structures must be approved by SIRTOA before and after erection.

3. Boris Goldshteyn (NYCT-Environmental) stated that the D/B Contractor will have to have his proposed painting program reviewed and approved by NYCT CPM – Environmental Engineering Department. Boris offered to provide Weidlinger with specifications and submission requirements to include with the RFP for this D/B Contract.

4. Miron Kuchuk (NYCT) asked whether SIRTOA would consider giving the Contractor extended single platform / track outages in order to expedite the work. Specifically his concern was that a typical work window would be insufficient for column work if the Contractor had to set-up and break down the containment system during every shift. Nikolaos Ikonomidis (SIRTOA) stated that it may be possible but it would be difficult to commit to anything specific at this time especially considering the anticipated overlap with the St. George Interlocking Project. Nick recommended that the Force Account estimate be based on doing the columns with multiple crews during weekend shifts.

5. Boris Goldshteyn (NYCT-Environmental) and Steve Bellisari (NYCT – Safety) commented that 100% lead paint removal for the entire limits of the project site would be very costly and time consuming. They questioned, given the good condition of much of the existing paint system, why overcoating was not considered. Theresa Fallon (WAI) responded that it would be preferable to remove the lead paint and given the scale and budget associated with this project it makes sense to do it now rather than later. Nikolaos Ikonomidis (SIRTOA) added that flag conditions often go unaddressed since it is difficult for DOT forces to perform steel repairs in areas where lead paint is present. Future maintenance would be significantly easier if the lead paint was completely removed.

6. Theresa Fallon stated that Weidlinger is still investigating the painting scope, cost and schedule with their environmental and estimating subs. If it is determined that 100% lead paint removal is either too costly or time-consuming (from either an individual work window or overall project schedule point of view) it may be necessary to scale back and consider overcoating in some areas.

7. The other areas of proposed work that should be considered in the Force Account estimate include:
• Old Viaduct (Bus Exit Ramp) - removing all the concrete encasement from the beams and columns, inspect and repair if necessary exposed steel and then clean (no paint on existing steel) and paint the exposed steel.
• Ramps B, C and D – Concrete repair and bearing replacement along Richmond Terrace abutments, miscellaneous steel repair and modifications and cleaning (100% lead paint removal) and painting existing steel.
• Ramp A – Abutment repair work and complete concrete superstructure replacement (most likely with a pre-fabricated drop-in bridge). No lead paint removal anticipated at this Structure.
• North Ramp – demolish existing bridge and construct new one on an alignment closer to the stadium. Intend to span over SIRTOA property. Only isolated areas of minor lead abatement anticipated to facilitate demolition of the existing steel bridge.

NEXT MEETING

No date was set up but it was tentatively agreed upon to meet again in a month or so (most likely at 2 Broadway) after NYC Transit has had a chance to prepare a preliminary force account estimate based on 100% lead paint removal.
Subject: "Load Removal" meeting

1. Boris Goldshreyn, NYCT/CDM 646-252-3510
2. Theresa Falcion, WAI, Weidlinger (917) 541-9800
3. Nikolaos Ikonomidis, SIRTOA (718) 876-8474
4. Patrick Nestor, NYC DOT (212) 788-2072
5. Muron Kuchuk, NYCDOT 646-252-3653
6. Steve Bellisari, NYCT/055 646-252-3559

Meeting Date: 6/30/06
Meeting Time: 1:30 PM
Meeting Place: ST GEORGE STATION
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)  
FROM: Ms. Theresa Fallon  
DATE: November 15, 2006  
SUBJECT: St. George, Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation Engineering Service Agreement for Design & Resident Engineering Services  
Contract No.: HBR1217  
NYC PIN: 84199MBBR594  
Stage II Project Agreement – No. 00C-18 / No. 00CR-2

Meeting: NYC Transit Coordination Meeting  
Date & Time: October 20, 2006 @ 10:00AM  
Place: 2 Broadway, 17th Floor Conference Room

Attendees: See attached Sign-In Sheet

The meeting was held to inform NYCT of NYCDOT’s planned design/build project to rehabilitate the bus ramps at the St. George Ferry Terminal and discuss key scoping issues and MPT criteria to be incorporated into the projects’ RFP. Specific items discussed were as follows:

1) Chris Sklavounakis (NYCDOT) and Theresa Fallon (WAI) began the meeting with an overview of the project scope, objective and schedule.
   - Weidlinger Associates is performing the preliminary engineering services to develop the scope and prepare RFP bid documents for a design/build contract to rehabilitate eight vehicular ramps and one pedestrian bridge at the St. George, Staten Island Ferry Terminal.
   - There are eight ramps that carry bus and passenger car traffic in and out of the facility. The last major structural work on these bridges was a deck replacement project in 1985-1988 that only addressed 5 of the 8 bridges. The proposed design-build project will look to upgrade these structures and provide a design life of 75 years.
   - The project scope will include new decks and eliminate joints where feasible, retrofit poorly detailed steel connections and rehabilitate/replace deteriorated steel super and substructure members as well as replacing the existing lead paint systems.
Project Schedule

- RFP Advertisement - Mid July 2007
- Project Registration (NTP) – Mid May 2008
- Start of Construction (1 year from NTP) – Mid May 2009
- End of Construction (4 years from NTP) – Mid May 2012

2) Theresa Fallon (WAI) went over proposed scope for bridges that will directly impact NYCT - comments/questions/responses follow in italics.

**Ramp B - Complete Deck Replacement**

- The RFP scope is being developed to require the D/B team to use methods of construction that will ensure a good quality final deck. Conventional staged deck reconstruction adjacent to active bus traffic would not be acceptable.
- Methods to consider will include constructing a temporary ramp to allow for complete detouring of traffic (possibly adjacent to Bus Ramp A), precast deck panels with closure pours made during nighttime windows or other means that address the issue of deck vibrations during casting and curing. NYCT responded that they understood the benefits of doing the work without adjacent traffic but were concerned about maintaining an acceptable level of access and stated they would like to review the D/B’s proposed MPT scheme during the design phase – NYCDOT assured them that their sign-off would be required for design approval. It was decided at the meeting to have the reconstructed cross section of Ramp B provide for wider roadway and narrower sidewalk. The new sidewalk width shall be 8 feet. The roadway will remain stripped as a 2 lane roadway.

**Bus Station North - Partial / Full Depth Deck Replacement**

- The limits of full and partial deck replacement will be similar to what was called for in the 1985 project. The area nearest to the Bus Entrance Ramp will be full depth while the other areas will call for partial deck replacement (i.e. replacement of asphalt and lightweight protective slab with selective repair of structural slab).
- To the extent possible the new sidewalk area constructed under the terminal reconstruction project is to remain.

**Bus Station South - Complete Deck Replacement & Refurbishment of Bus Canopies and Dispatch Tower**

- The limits of full deck replacement will be similar to what was called for in the 1985 project. The former taxi ramp area (i.e. the new esplanade) is to remain. It is assumed this work will be done in stages one Bus Ramp at a time.
The RFP scope will call for modifications/upgrades to the bus kiosks and to more closely match the look of the canopy in the new esplanade area. NYCT stated that the modified canopies must still provide a physical barrier between bus lanes (i.e. passengers should not be able to cross between the ramps. In fact any existing openings should be closed up when making these modifications. NYCDOT will clearly reflect this requirement in the RFP scope of work.

Presently the scope of work at the dispatchers’ tower is limited to architectural improvements to the exterior. However, there may be some benefit to relocating the tower and breakroom trailer (presently cited on Bus Ramp A) to another portion of the deck to facilitate staging and satisfy full time access criteria. The possibility of extending the bus station deck on its western edge (closer to Richmond Terrace) has been conceptually considered and discussed with SIRTOA. The railroad does not have an issue with it other than the disruption during construction. WAI to explore further to see what impact this would have on the budget, schedule and force account to see whether this can be justified. NYCT stated that additional deck area would be highly desirable. It is believed that there are in-house plans to relocate the tower and breakroom to this location in the future. NYCDOT responded that they will not undertake the relocation of the tower under this project. However the RFP will instruct Design-Build Teams that their design should be such that it won’t adversely impact NYCT’s ability to do so in the future.

NYCT also requested that some type of barrier be constructed along side the entrance to the terminal access ramps. This needs to address the safety concern of someone walking up the ramp and then turning out and stepping into oncoming bus traffic. This barrier must prevent someone from making the turn but not obstruct visibility. NYCDOT will incorporate this in their scope of work.

NYCT also requested that the PA system and “Holding” lights (small red lights along the ramps that let the bus drivers know to wait for a late ferry arrival) be upgraded in this contract. NYCDOT stated that they will add this since it is unlikely to have a major affect on the overall budget.

Old Viaduct - Limited Area of Complete Deck Replacement

- Full depth deck replacement will be limited to the areas not reconstructed under the recent Terminal Reconstruction Contract (Skanska project).
- It is assumed that this work will be done in stages but some over widening of exit ramp may be necessary to accommodate traffic flow. NYCT asked if it...
was possible to have the D/B designer investigate permanent reconfiguration of the exit ramp (possibly in conjunction with signalization modifications) to improve traffic flow out of the terminal. NYCDOT stated that the DB RFP will clearly mandate the Design-Build Company to do so and to study and implement modifications to the Richmond Terrace intersections so that traffic flow entering and exiting the terminal as well as street traffic flow is being optimized. The Design-Build Company must pursue the approval of DOT-Traffic for all related proposals and work.

- The new bridge railing in the first three spans will be replaced with a code satisfying traffic barrier and fencing will be added to protect tracks below.

3) NYCT provided input on MPT Criteria to include in RFP

- Four bus lanes must be maintained at all times.
- Taxi stand will have to be relocated to a different area of the terminal (e.g. below the ramp possibly at the passenger car drop off/ pick-up area). It is too dangerous for buses and taxis to operate in the same lane.
- Access to the dispatchers’ tower (and crew breakroom trailer) must be maintained at all times during construction.

SUBSEQUENT TO THE MEETING

Phil Speidel (NYCT) informed Weidlinger of a potential overlap in scope between NYCDOT’s ramp rehabilitation project and an upcoming EDC project to rehabilitate the bus shelter canopies. At the request of Phil Speidel, Darnell Tyson (NYCT – Bus Service Planning) contacted Theresa Fallon (WAI) and stated that he believed the EDC contract would be limited to replacing the bus shelter roofs. He recommended that WAI contact Tarek Hatab of EDC to get more information on scope and schedule.

NEXT MEETING

The need for an additional meeting has not been determined at this time. WAI and NYCDOT to work on and forward in the future, portions of the RFP which pertain to items discussed at this meeting to NYCT for review and concurrence. If at that time there are still questions or concerns another meeting will be set-up.
51 Ferry Ramp Reconstruction Meeting
with NYCT, NYC DOT & WAI
October 26, 2006 10:00 AM 2 Broadway

Irwin Neisson 081r planning 646-252-5638
Philip Speidel
DUKENS CELESTIN DESIGN BUIID (DOT) 212-227-4634
Theresa Fallon Weidlinger 917-541-9800
Jim Quinn Weidlinger 212-367-2853
Chris Sklavounakis NYC DOT-DB 212-788-2028
Karl Strickler NYC SD 646-252-5525
Palmer A. Reale NYC ST ADIV 718-494-5609
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)

FROM: Ms. Theresa Fallon

DATE: December 18, 2006

SUBJECT: St. George Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation Engineering Service Agreement for Design & Resident Engineering Services
Contract No.: HBR1217
NYC PIN: 84199MBBR594
Stage II Project Agreement – No. 00CR-02

Meeting: SIRTOA/NYCT Coordination Meeting No. 4
Date & Time: November 17, 2006 @ 10:30 AM
Place: SIRTOA’s Offices, 5th Floor Conf. Room, 60 Bay Street, SI 10031
Attendees: See attached list

The meeting was held to discuss and finalize the proposed railroad related scope of work for the future design/build contract as well as SIRTOA/NYCT’s requirements for work above/adjacent to their tracks. Specific topics discussed as well as action items (italicized text) were as follows:

1) Project Schedule

WAI (T. Fallon) informed everyone that the project has slipped about a year from its original schedule but it is now back on track with committed NYC funding in FY 08.

The D/B Project Schedule is as follows:
• RFP Advertisement - Mid July 2007
• Project Registration (NTP) – Mid May 2008
• Start of Construction (1 year from NTP) – Mid May 2009
• End of Construction (4 years from NTP) – Mid May 2012
Potentially overlapping in-house SIRTOA projects

a) St. George Interlocking – SIRTOA stated that this project has also slipped about a year so it looks like it will be running concurrently with the D/B ramp rehab project.

b) Extension of Service to the North – SIRTOA stated that this project is no longer being pursued.

c) Security Project (In-house design -primarily cameras and fencing) – this job has been designed and construction will start shortly. Work should be complete well before D/B project starts. SIRTOA to furnish final plans for inclusion in bidder’s package.

d) Additional Fencing project – currently underway, SIRTOA to furnish final plans for inclusion in bidder’s package.

2) Proposed Scope of Work (Exhibit E)

A draft copy of Exhibit E – Scope of Work from Book 2 (Engineering Requirements) was distributed to meeting attendees.

Major Design / Construction Items that will Impact SIRTOA:

a) Inspection & Survey – will require track access (fall of 2008)

b) Temporary Utility Relocation - requires track access

c) Deck and Superstructure Demo - requires erecting temporary shielding over tracks

d) Encasement Removal - requires erecting temporary shielding over tracks

e) Steel Mod / Repairs & Bearing Replacement – temporary shoring and track access

f) Abutment Repairs / Modifications – requires track access (along Richmond Terrace)

g) Pier Demo / Construction – work adjacent to tracks / install temp sheeting (North Ramp)

h) Cleaning (100% lead abatement) and Painting of Structural Steel – Requires installation of containment system and track and platform access for column work

i) Pigeon Deterrent System – track access (end of job after painting is complete)

SIRTOA Input on Scope Items:

a) Underdeck Lighting – SIRTOA requested that the lighting under the bridges in the area of the interlocking be replaced / upgraded in this contract. The current lighting is insufficient and it was their understanding that it was supposed to be included under the recent Terminal Reconstruction Project but it wasn’t.
SIRTOA stated that are willing to take over the operation and maintenance of the system after it is installed. NYCDOT requested W/AI to draft up a Memo of Understanding to reflect what was agreed to by the parties.

b) Fencing on Bridges Above – SIRTOA stated that they would like to see fencing installed on bridges wherever they cross over tracks or public use areas such as parking lots and sidewalks regardless of whether there is a sidewalk on top.

c) Pigeon Deterrent System – SIRTOA stated that in addition to installing over the station tracks/platforms and parking lot areas they would also like to see the system installed over employee walkways and areas where trains are stored.

d) Noise Abatement – SIRTOA concurred with NYCDOT’s planned approach to require the contractor to shroud sandblasting equipment and saw cut out the deck in panels to reduce noise. They further requested that specific language be added to require the contractor to design/construct temporary shielding / containment systems in such a manner (e.g. with heavy plastic tarps) so as to prevent dust and water from passing through to the platforms below.

e) Drainage - SIRTOA stated that the track drainage is schedule to be replaced under the St. George Interlocking Project and it was their intention to tie-into the underground pipes that are part of the existing bridge drainage system. They requested that if the scope of work is to abandon the existing underground system that the new drainage system be designed to handle the capacity of both the bridges and the tracks. Text will be added to the RFP explaining the situation and requiring the drainage designers to coordinate with SIRTOA and their design consultant (if applicable) to ensure that the new system can handle both.

f) Breakroom Trailer – SIRTOA asked if it was possible to have the Contractor provide and install a temporary trailer away from the work area so that staff could have a place to go to if they needed to get away from construction noise. NYCDOT agreed that this was a reasonable request. SIRTOA will provide location and criteria for what should be furnished to W/AI for inclusion in the Scope of Work.

3) Railroad Requirements / Specifications (Exhibit G and Appendix A)

a) A draft copy of Exhibit G – Railroad Requirements from Book 2 (Engineering Requirements) was distributed to meeting attendees for review and comments.

This was prepared using the template previously provided by NYCT / SIRTOA (i.e. Spec Section 1D - Manner of Prosecution of the Work)

- Text in Blue indicates project specific changes made to template
- Text in Red indicates areas were modifications are still needed
b) A draft copy of Appendix A – Additional Procedures and Criteria for working on SIRTOA’s ROW was distributed for review and comment.

c) WAI asked if SIRTOA had any other procedural documentation that they want included in the RFP. SIRTOA stated that they felt it would be worthwhile to include the following documents:
- Book of Safety Rules
- Book of Operating Rules
- MW1 (at least applicable sections)

Sam Kolta (SIRTOA) agreed to provide WAI with a summary of comments and a copy of the documentation they want included in the RFP.

Sam Kolta (SIRTOA) requested WAI to provide a copy of the final meeting minutes along with any hand-outs given at the meeting to Rajen Udeshi, Principal Engineer of Outside Projects at NYC Transit.

4) Existing Drawings

a) At the close of the meeting T. Fallon (WAI) provided SIRTOA with a CD containing previously requested survey drawings for the area north of the Richmond County Stadium (as well as electronic versions of the meeting’s hand-outs).

b) As requested N. Ikonomidis (SIRTOA) provided WAI with full scale drawings of the stadium station stairs. WAI to make copies and return to SIRTOA (WAI to provide one additional hard copy and a CD with the scanned version).

NEXT MEETING

Cleaning & Painting Meeting

A separate meeting will be set-up to discuss NYCT specific specification / requirements regarding lead abatement and painting. This meeting will take place in December and it is the intention to have environmental division representatives from both NYCT and NYCDOT.

Force Account Meeting

A separate meeting will be set-up in December with Myron Kuchuk of NYCT to go over final Force Account numbers.
C. Sklavounakis stated that it will be very important to get a good Force Account estimate since it is the City’s intention to split whatever (if any) money is remaining in the account with the Contractor after the project is complete. She explained that this was another means of giving the Contractor an incentive to work as efficiently as possible.

**Coordination Meeting**

The need for additional coordination meetings will be determined after the Painting and Force Account Meetings.
# MEETING REGISTER

**MTA STATEN ISLAND RAILWAY**

**Date:** 11/17/06  
**Location:** GO BAY ST - 5TH FLOOR CR  
**Subject of Meeting:** HBR-1217 - DOT (5) BUS RAMP REHAB AT SGR.

<table>
<thead>
<tr>
<th>NAME</th>
<th>AGENCY &amp; TITLE</th>
<th>AREA CODE &amp; TEL. NO.</th>
<th>FAX NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niko Karamouzis</td>
<td>MTA'S JR. ASS'T DIR</td>
<td>718-876-8472</td>
<td>876-8358</td>
</tr>
<tr>
<td>R. Beison</td>
<td>S.I.R.</td>
<td>718-876-8271</td>
<td>876-8285</td>
</tr>
<tr>
<td>S. Kutof</td>
<td>S.I.K.</td>
<td>718-876-8256</td>
<td>876-8285</td>
</tr>
<tr>
<td>Peter Arguinzon</td>
<td>S.I.R</td>
<td>718-826-8256</td>
<td>826-8285</td>
</tr>
<tr>
<td>Barry Greenwald</td>
<td>S.I.R</td>
<td>718-826-8235</td>
<td>8235</td>
</tr>
<tr>
<td>Durese Celestin</td>
<td>NYC DOT</td>
<td>212-225-4621</td>
<td></td>
</tr>
<tr>
<td>Chris Stachor</td>
<td>212-786-3728</td>
<td>212-786-3728</td>
<td></td>
</tr>
<tr>
<td>John Gaul</td>
<td>S.I.R</td>
<td>718-876-8239</td>
<td>8258</td>
</tr>
<tr>
<td>John Russell</td>
<td>S.I.R</td>
<td>718-876-8249</td>
<td>8258</td>
</tr>
<tr>
<td>John Russell</td>
<td>S.I.R</td>
<td>718-876-8269</td>
<td>8258</td>
</tr>
<tr>
<td>J. Nestor</td>
<td>NYC DOT</td>
<td>212-788-2020</td>
<td></td>
</tr>
</tbody>
</table>


From: Sklavounakis, Christothia [csklavounakis@dot.nyc.gov]
Sent: Friday, December 08, 2006 4:20 PM
To: Fallon, Theresa; Halczil, Richard
Cc: Nestor, Patrick
Subject: Meeting with Ferries.

- Explained our scope and time frames
- Ferries will look into partial registrations rather than moving the whole job to FY11
- Ramp A: no problem to detour traffic
- Ramp B: they are OK with smaller sidewalk
- Ramp D: OK sidewalk on both sides; additional parking on site could be accommodated under the terminal; no do not remove islands/booths below ramp D
- Area under ramp D closest to the building very crowded; not easy to throw vehicles there for sure not the taxis; they questioned if during construction of ramp C the D becomes 2 way and if there is room for turns at the end of ramp D so that there are no vehicular conflicts between vehicles entering and exiting
- Bus Station North: the only place where taxis could go is to use the Wall St ramp then exit behind the stadium: need to seek input from Traffic-Gerard Soffian. We will schedule meeting.
- Tony Athenalos of DOT now oversees a traffic study/modification of signals at Richmond Terrace outside ramp B so that buses get faster on the terminal. Same with exit. Need to co-ordinate with him.
- Red Bridge: Yes, keep the stairs to the sidewalk. Ok, for open bridge.
- North ramp: Ferries has no issue with not accommodating the illegal PD parking.
- Need to get from Ferries their Security Fencing Plan so that the DB contractor gets to know his physical limitations
- All workers and supervisory personnel is to comply with Marine Transportation Security Act at all times. This includes always wearing identification. To be included in the RFP.
- Lighting and drainage and pigeon deterrent system: they are Ok with what we do
- Forgot to ask them about using Skanska’s office.
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)
FROM: Ms. Theresa Fallon
DATE: February 28, 2007
SUBJECT: St. George, Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation Engineering Service Agreement for Design & Resident Engineering Services
Contract No.: HBR1217
NYC PIN: 84199MBBR594
Stage II Project Agreement – No. 00C-18 / No. 00CR-2

Meeting: Coordination Meeting with NYCDOT Highway Design & Construction
Date & Time: February 16, 2007 @ 11:00 AM
Place: 7th Fl. 28-11 Queens Plaza North, Long Island City, NY 11101
Attendees: See attached list

The meeting was held to discuss the issue of where to relocate taxi service during staged deck replacement on the Bus Station Ramps. Specific items discussed are as follows:

Project Schedule

1. C. Sklavounakis outlined the general scope and schedule for the project:
   - Primarily the project objective is a structural rehabilitation of all the bridges at the terminal. This work will include complete deck replacement for most of the bridges, steel rehabilitation where needed and joint replacement where feasible and 100% lead abatement and installation of a new coating system on all structural steel members.
   - Non-structural work includes upgrading of the bridge lighting, replacement of bridge drainage, installation of pigeon deterrent system and refurbishment of the bus canopies.
   - Work will also include reconstruction of the North Ramp on a modified alignment to improve traffic flow at the intersection with Richmond Terrace and Wall Street.
• The project is scheduled for advertisement in the summer of 2007, NTP in fall of 2008 and construction to begin one year later (first year for design) and continue for three years.

2. C. Sklavounakis explained that this meeting was prompted by previous discussions with NYCT - Bus Operations, NYCDOT Passenger Transport (Ferries) and staff from NYCDOT Taxi Program.

• In order to comply with NYC Transit’s requirement of maintaining four bus lanes at all times during staged deck replacement it will be necessary to relocate taxi service to another location within the terminal.
• Possible locations considered included relocating taxis to the Kiss-N-Ride area just outside the South Lobby Entrance or to an area at the bottom of the existing North Ramp near the North Entrance.
• NYCDOT Ferries had expressed serious concern with using the Kiss-N-Ride area due to the existing congestion. The biggest concern is not with taxis dropping off passengers but with them waiting for new fares.
• At a meeting with Taxi Program staff on 2/7/07, (Nancy Wright, Izrail Yesilevsky and Ryan Russo) it was explained that the existing taxi lane at the Terminal is not technically a taxi stand and in fact most of the taxis are private car service vehicles which are only allowed to pick up pre-arranged fares. However given the lack of yellow cabs in the area this is a service that benefits Terminal users so the City is not necessarily looking to prohibit this activity. They seemed to think providing an area for five cars to park (say 100’) would be sufficient.

3. S. Barkho agreed that relocating the taxis to the Kiss-N-Ride would be problematic. He would prefer that the parking lot at the bottom of the existing North ramp be re-configured to provide an area for taxi drop-off and pick-up. Ideally he would like the Design-Build team to explore options that would allow for the permanent relocation of taxis to this area since the mixing of buses and taxis on the Bus Ramps has always been undesirable.

4. Highway Design also requested that Design Build Team scope include looking at ways to slow traffic down at the Ramp C entrance. This has been a long standing problem due to the wide roadway width and steep grade.

5. Highway Design also requested that the Design-Build Team scope include looking at possible improvements to the intersection of Bay Street, Richmond Terrace and the Exit / Entrance to the Terminal. WAI and NYCDOT stated that they are aware of and have been in contact with Ernest Athanailos about the on-going Transit Signal Priority Project. This project was looking to improve bus flow in the area by giving specially equipped buses priority at signalized intersections. This program should be completed before the Design-Build Contract is awarded but the D/B Team is going
to be asked to conduct additional studies to see if further long-term improvements could be made for overall vehicular and pedestrian traffic flow.

6. Sam Barkho also stressed that it will be important to get NYCDOT Parking Division and the Community Board input before finalizing the RFP. NYCDOT D/B Unit concurred. Subsequent to this meeting a meeting has been scheduled with Parking Division for March 5th. The meeting with the Community Board will take place in the spring when the Bid Document package is further along.

7. Finally Sam Barkho requested that the D/B team be instructed to submit their proposed plans to his department for review and approval.

NEXT MEETING

- The need for another meeting has not been established at this time.
<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dukens Celestin</td>
<td>212-227-4634</td>
<td>NYC DOT</td>
</tr>
<tr>
<td>Arkadiy Kagan</td>
<td>718-433-3353</td>
<td>NYC DOT</td>
</tr>
<tr>
<td>Sam Borkulo</td>
<td>718-433-3160</td>
<td>NYC DOT</td>
</tr>
<tr>
<td>Prakash Sapre</td>
<td>718-433-3200</td>
<td>NYC DOT</td>
</tr>
<tr>
<td>Theresa Fallon</td>
<td>713-591-9800</td>
<td>Weidlinger</td>
</tr>
<tr>
<td>Chn's Sklavounakis</td>
<td>212-788-2078</td>
<td>NYC DOT</td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)  
FROM: Ms. Theresa Fallon  
DATE: April 9, 2007  
SUBJECT: St. George, Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation Engineering Service Agreement for Design & Resident Engineering Services
Contract No.: HBR1217
NYC PIN: 84199MBBR594
Stage II Project Agreement – No. 00C-18 / No. 00CR-2

Meeting: Coordination Meeting with NYCDOT Bureau of Parking
Date & Time: March 5, 2007 @ 10:00 AM
Place: 1st Fl. 34-02 Queens Boulevard, Long Island City, NY 11101
Attendees: See attached list

The meeting was held to discuss parking related issues both long term and during construction of the St. George Ramp Reconstruction and Rehabilitation Project. Specific items discussed are as follows:

Project Schedule

1. C. Sklavounakis (NYCDOT) / T. Fallon (WAI) outlined the general scope and schedule for the project:
   
   - Primarily the project objective is a structural rehabilitation of all the bridges at the terminal. This work will include complete deck replacement for most of the bridges, steel rehabilitation where needed and joint replacement where feasible and 100% lead abatement and installation of a new coating system on all structural steel members.
   
   - Non-structural work includes upgrading of the bridge lighting, replacement of bridge drainage, installation of pigeon deterrent system and refurbishment of the bus canopies.
   
   - Work will also include reconstruction of the North Ramp on a modified alignment to improve traffic flow at the intersection with Richmond Terrace and Wall Street.
• The project is scheduled for advertisement in the summer of 2007, NTP in fall of 2008 and construction to begin one year later (first year for design) and continue for three years.

**Project Elements with Potential Parking Impacts**

2. **T. Fallon presented the parking issues related to reconstruction of the North Ramp on a new alignment and demolition of the existing North Ramp.**
   - The new North Ramp will be constructed immediately adjacent to and parallel with the Richmond County Stadium in the EDC owned East Stadium Parking Lot.
   - The ten handicap parking spots currently located under the new ramp location will need to be permanently relocated.
   - A significant number of non-handicap spots will be lost during construction in the East Parking Lot but it is anticipated that many but probably not all can be restored once construction is complete.
   - After the new North Ramp is complete and opened to traffic the existing North Ramp will be demolished. Parking spots in both the North Municipal Lot and the East Stadium Lot will have to be lost temporarily to facilitate demolition. It is possible that some additional spots may be gained in the North Muni Lot once demolition is complete and stripping is re-done.

3. **The Parking Bureau’s response to the North Ramp work was as follows:**
   - In general J. Girardi (Parking) requested that all of the work in this contract be done in a manner that considered maintaining parking to the extent possible during construction but that after construction there should not be a net loss. Patrons have been losing spots over time due to a number of factors and further reduction could not be accommodated.
   - J. Girardi asked if it was possible to include resurfacing and stripping of the North lot as part of the D/B contract so that the lot could be laid out more efficiently.
   - C. Sklavounakis stated that she would have Weidlinger look into what the impact would be on the overall budget.
   - J. Girardi and S. Ghobrial (Planning & Traffic Ops) stated that they would look into possibility of transferring funds to cover the added expense.
   - As for estimating the cost J. Girardi stated they could run numbers in-house but asked that WAI provide square footage for the lot.
   - The estimate is to be based on 6” gravel course, 4” standard course and 2” wearing surface.

4. **T. Fallon presented the parking issues related to taxi relocation during staged deck replacement of the Bus Station**
NYC Transit (Buses) has requested that four lanes of bus traffic be maintained at all times during construction. In order to accommodate this taxi traffic would need to be relocated during construction. NYCT suggested the Kiss-N-Ride area at the south entrance as a possible location.

In subsequent meetings with Ferries and NYCDOT Highway Design division it has been decided that the better location would be at the bottom of the North Ramp (Kiss-N-Ride is already too congested).

Creating a workable taxi area at the bottom of the North Ramp will require modifications to the North Parking Lot and undoubtedly a temporary loss of some parking. (A potential location would be parallel to the new Ferries loading zone created under the terminal reconstruction project.)

In the previous meeting with Highway Design they had stated that they would like to see the taxis permanently relocated if at all possible.

5. The Parking Bureau’s response to the taxi relocation was as follows:
   - Parking suggested that there maybe someway to accommodate them along the waterfront access street but that they understood there may be some geometric constraints that might make that difficult.
   - All agreed if a permanent home could be found for taxis that would be preferable but that ultimately the total number of spaces should not be reduced to accommodate this.
   - Parking suggested that there may be a workable scheme by converting a portion of the loading zone area into a taxi stand but that these would need to be discussed with Ferries. (NYCDOT D/B offered to schedule a meeting with Ferries)

6. T. Fallon presented the parking issues related to proposed deck rehabilitation work at Ramp C (the terminal entrance ramp)
   - Scope of work for Ramp C includes building a sidewalk and new concrete barrier along the south fascia so the 24 Municipal spots currently on the bridge will be lost during this construction.

7. The Parking Bureau’s response to Ramp C work was as follows:
   - Parking stated that the understood the need for the work and but requested that the Contractor be directed to notify them in advance when this work is to take place and how long they anticipate it taking
   - Additionally they presented plans they had developed for the Ramp which included adding a stripped sidewalk area, gore area and rumble strips.
   - They will verify what has been done and let NYCDOT/WAI know what still needs to be done for inclusion in the RFP scope.
8. T. Fallon presented the parking issues related to **Ramp B and other incidental work** that may require some short term loss of parking.
   - Since many of the ramps in the project span over the Municipal lots it will be necessary from time to time to restrict parking in discrete areas where the Contractor is working overhead.

9. The Parking Bureau’s **response to Ramp B and other incidental work** was as follows:
   - Parking requested that the Contractor be directed to give them advance Notice as to when, how many and for how long.
   - Also every effort should be made to stage work such that it is not necessary to close large areas at a time.

**NEXT MEETING**

- NYCDOT D/B has subsequently set up a meeting for 11:00 am on March 15th with Passenger Transport (Ferries) Division and the Parking Bureau to resolve the issue of taxi relocation.
<table>
<thead>
<tr>
<th>NAME</th>
<th>AGENCY</th>
<th>PHONE</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOHN GIRARDI</td>
<td>DOT</td>
<td>718-786-6984</td>
<td><a href="mailto:jgirardi@dot.ny.gov">jgirardi@dot.ny.gov</a></td>
</tr>
<tr>
<td>THERESA FALCON</td>
<td>WAI</td>
<td>(973) 541-9800</td>
<td><a href="mailto:fallone_wai@wai.gov">fallone_wai@wai.gov</a></td>
</tr>
<tr>
<td>Chris Sklanouakis</td>
<td>DOT</td>
<td>212-788-2078</td>
<td><a href="mailto:sklanouakis@dot.ny.gov">sklanouakis@dot.ny.gov</a></td>
</tr>
<tr>
<td>Prabhat C. Saikia</td>
<td>DOT</td>
<td>(718) 786-8148</td>
<td><a href="mailto:prabhat@dot.ny.gov">prabhat@dot.ny.gov</a></td>
</tr>
<tr>
<td>DUKENS CELESTIN</td>
<td>DOT</td>
<td>212-227-4634</td>
<td></td>
</tr>
<tr>
<td>Patrick Nestor</td>
<td>DOT</td>
<td>(212) 788-2072</td>
<td><a href="mailto:pnestor@dot.ny.gov">pnestor@dot.ny.gov</a></td>
</tr>
<tr>
<td>Sami Ghobrial</td>
<td>DOT</td>
<td>(718) 786-7114</td>
<td></td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)  
FROM: Ms. Theresa Fallon
DATE: April 9, 2007
SUBJECT: St. George, Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation Engineering Service Agreement for Design & Resident Engineering Services
Contract No.: HBR1217
NYC PIN: 84199MBBR594
Stage II Project Agreement – No. 00C-18 / No. 00CR-2

Meeting: Coordination Meeting with Ferries & Parking
Date & Time: March 15, 2007 @ 11:00 AM
Place: Whitehall Conference Room, NY
Attendees: See attached list

The meeting was held to discuss the issue of where to relocate taxi service during staged deck replacement on the Bus Station Ramps. Specific items discussed are as follows:

1. C. Sklavounakis (NYCDOT) began the meeting by explaining the issues related to relocating taxis during deck replacement on the bus ramps.
   - Can’t be relocated to Kiss-N-Ride since this area is already heavily congested.
   - Can’t be relocated to sidewalk area along waterfront road north of the terminal without pushing back the sidewalk and possibly the retaining wall holding up the sidewalk.
   - Most likely place is to re-do the North Muni Parking lot in front of Ferries employee parking area. However this will result in a loss of commuter parking spaces which is a problem since commuters have had to endure parking shortages for quite some time during the terminal work.
   - Loss of commuter spaces could be minimized if it was possible to use part of the Ferries employee parking area.

2. J. DeSimone (Ferries) responded that encroaching into the employee area would not be possible in light of future planned work at the terminal. A security contract is going out that will fence in this area (as well as the rest of the terminal grounds) and a generator will be installed behind the fence in this area.
3. F. Nicolosi (Ferries) offered to provide WAI/NYCDOT plans showing where the security fencing is to go so that it could be included in the RFP for the Design/Build Contract.

4. J. DeSimone stated that they don’t have an issue if the taxi stand is located in front of the fenced in area provided the entrance is not obstructed. However, there may be issues with taxi users complaining that moving them to this entrance of the terminal is a hardship since it is more difficult for someone with disabilities to get into the building on this side of the terminal. (He stated that they have received complaints in the past).

5. T. Fallon (WAI) offered that it might be possible to relocate them to the Bus Entrance Ramp (Ramp B) if the sidewalk could be cutback to provide an additional lane. However this would need to be looked at closely from a traffic safety point of view. The other down side would be that this would dictate the contractor’s sequence of construction since Ramp B would have to be completed prior to beginning any work on the Bus Station.

6. C. Sklavounakis requested that WAI explore the Ramp B option and then set-up a meeting with Sam Barkho (Highway Design) to discuss whether it has any merit. If S. Barkho feels it could be done then the next step would be to meet with NYCT Buses to let them know about the proposed plan.

7. J. DeSimone stated that security at the terminal is becoming a major issue and that going forward it will be difficult to gain access to secure areas. He recommended that WAI contact Margaret Gordon (Ferries - Security) to find out what the D/B Contractor will be expected to do when working on the site.

8. When asked about potential Contractor Staging areas, J. DeSimone stated that the 69th street terminal building Skanska used during the terminal work would not be available but that they could be accommodated underneath the main terminal building in the area where Skanska currently has trailers.

NEXT MEETING

- A meeting has been scheduled for April 2, 2007 at 10:00am to meet with Highway Design and Construction Group to discuss the feasibility of relocating the taxis to Ramp B during construction.
March 15, 2007

SJ Ferry Ramps Co-ordination meeting.

<table>
<thead>
<tr>
<th>Name &amp; Affiliation</th>
<th>Tel</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chris Sklavounakis - NYCDOT</td>
<td>212-788-2078</td>
<td><a href="mailto:csklavounakis@dot.nyc.gov">csklavounakis@dot.nyc.gov</a></td>
</tr>
<tr>
<td>Sam Ghobarah - DOT/PK-4</td>
<td>718-786-7114</td>
<td><a href="mailto:sghobarah@dot.nyc.gov">sghobarah@dot.nyc.gov</a></td>
</tr>
<tr>
<td>John Girardi - DOT/PK-4</td>
<td>718-786-6984</td>
<td><a href="mailto:jgirardi@dot.nyc.gov">jgirardi@dot.nyc.gov</a></td>
</tr>
<tr>
<td>James DeSimone - DOT/JTF</td>
<td>718-876-2657</td>
<td><a href="mailto:jdesimone@dot.nyc.gov">jdesimone@dot.nyc.gov</a></td>
</tr>
<tr>
<td>Theresa Fallon - WCW/JTF</td>
<td>718-396-4020</td>
<td><a href="mailto:tfallon@wai.com">tfallon@wai.com</a></td>
</tr>
<tr>
<td>Frank Nicolas - DOT/JTF</td>
<td>212-227-4634</td>
<td><a href="mailto:fnicolas@dot.nyc.gov">fnicolas@dot.nyc.gov</a></td>
</tr>
<tr>
<td>Durens Celestin - DOT</td>
<td>212-788-2072</td>
<td><a href="mailto:dcelestin@dot.nyc.gov">dcelestin@dot.nyc.gov</a></td>
</tr>
<tr>
<td>Patrick Nestor - DOT</td>
<td>212-788-2072</td>
<td><a href="mailto:pnestor@dot.nyc.gov">pnestor@dot.nyc.gov</a></td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)  
FROM: Ms. Theresa Fallon  
DATE: April 9, 2007  
SUBJECT: St. George, Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation  
             Engineering Service Agreement for  
             Design & Resident Engineering Services  
             Contract No.: HBR1217  
             NYC PIN: 84199MBBR594  
             Stage II Project Agreement – No. 00C-18 / No. 00CR-2

Meeting: Coordination Meeting with NYCDOT Highway Design & Construction  
Date & Time: April 2, 2007 @ 11:00 AM  
Place: 7th Floor Conf Room  
Attendees: See attached list

The meeting was held to discuss the issue of where to relocate taxi service during staged deck replacement on the Bus Station Ramps. Specific items discussed are as follows:

1. Theresa Fallon (WAI) began the meeting by explaining why the taxis need to be relocated and an overview of the various options explored to date.
   - At the request of NYC Transit – Surface Operations the D/B Contractor must maintain 4 lanes of bus traffic at all times while re-decking in the fifth lane.
   - First looked at the Passenger Drop-off /Pick-Up Area (Kiss-N-Ride) but it was determined early on that this was not a viable area for relocation due to the already congested condition.
   - Next considered moving them to the North Muni parking lot near the bottom of the North Ramp. This met with some opposition from NYCDOT Parking Operations since it would mean losing revenue from commuter parking spaces already insufficient in number to handle demand.
   - Looked at moving them to sidewalk along the waterfront street but this would require significant construction since existing road width is insufficient to allow 2 way traffic and curbside parking.
   - Finally looked at moving them to the sidewalk along Bus Entrance Ramp (Ramp B).
2. Theresa Fallon then went into more detail on the two most viable options.

Option 1 - Relocate Taxis to Sidewalk along Bus Entrance Ramp (Ramp B)
- Requires cutting back sidewalk at top of the ramp to approximately 10 feet for a length of 250 feet.
- Provides room for approximately 7 taxis.
- Install a temporary barrier on ramp to separate bus and taxi traffic with 20 feet width in taxi lane to allow taxis to pass one another.
- Taxis would then have to merge with bus traffic at the top of the ramp and go down a pre-determined bus lane to exit the station.
- Taxi passengers could enter the terminal at the south lobby where there are stairs and an elevator.

Pros
- Does not impact parking.
- Close access to terminal.
- Pattern is very similar to what taxis and passengers are already doing now so relatively easy to sign and direct users.

Cons
- Taxis will have to go down a Bus lane to exit the station which is not desirable and will likely meet opposition from NYCT.
- Will have more impact on how D/B contractor has to stage the work.

General Comments
- S. Barkho (Highway Design) stated that although geometrically the scheme works he would like to see the taxi area lengthened to start the transition before the curve and provide more stacking room.
- S. Barkho was also concerned that the total number of vehicles (buses and taxis) using the station remains the same throughout construction yet there will be less area to accommodate them – particularly a concern when the contractor is working on the exit ramp.
- Michael Harnett (NYCDOT) expressed concern that if there is only one elevator at the entrance and if it is not working handicap passengers may be stranded (i.e. no ramp).

Option 2 – Relocate Taxis to North Muni Lot at Bottom of North Ramp.
- Requires removing 17 parking spots along barrier in front of Ferries Maintenance Building.
• Provides room for approximately 5 taxis to park. (Minimum number of spaces needed according to NYCDOT – Taxi Unit)
• May require re-working entrance into parking lot to improve traffic flow.

Pros
• Less impact on D/B’s construction staging.
• No impact on bus operations.

Cons
• Lose parking spaces (and City revenue) during construction.
• Increase traffic congestion into and out of the North Muni lot.
• Further distance to terminal entrance.

General Comments
• Sam Barkho stated that he would prefer this option from a safety point of view since it separates buses and taxis.
• Michael Harnett suggested that it might be necessary to mandate that the D/B contractor have a flagger down at the bottom of the North Ramp to direct traffic during the peak hours.
• He also suggested that there may be some value in converting the North Ramp to one way traffic to improve traffic flow during construction. Maybe have them enter via the North Ramp and exit north of the stadium at the intersection with Richmond Terrace and Jersey Street.
• As for losing parking it was generally discussed that this may be necessary for the short term but that in the end there should be a net gain once the North Ramp is demolished and the lot is repaved and stripped more efficiently.
• There is also the possibility that the Contractor may elect to build the North Ramp before doing the re-decking of the bus station so the Muni Lot would already have been expanded prior to relocating the taxis there.

3. It was agreed that the D/B Contractor should be given the flexibility to pursue either option but that they would have to present detailed plans to various units within NYCDOT for final approval.

4. Subsequent to the meeting it was decided by NYCDOT Design/Build to state in the RFP that the proposers are to consider the Parking Lot option when preparing their bid proposals but that they are still free to pursue other options upon NTP assuming that can get the relevant approvals.

NEXT MEETING

• No additional meetings on this topic are anticipated at this time.
<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUKENS CELESTIN</td>
<td>212-227-4634</td>
<td><a href="mailto:dcelesti@nycdot.gov">dcelesti@nycdot.gov</a></td>
</tr>
<tr>
<td>JIM QUINN (NCDU)</td>
<td>212-367-2853</td>
<td><a href="mailto:quinj@nyc.gov">quinj@nyc.gov</a></td>
</tr>
<tr>
<td>THERESA WALLOD (NCDU)</td>
<td>917-541-9800</td>
<td><a href="mailto:FALLOW@WTH.COM">FALLOW@WTH.COM</a></td>
</tr>
<tr>
<td>SAM BARKHO</td>
<td>718-433-3160</td>
<td><a href="mailto:SBARKHO@DOT.NYC.GOV">SBARKHO@DOT.NYC.GOV</a></td>
</tr>
<tr>
<td>ISRAEL YESILEVSKY</td>
<td>212-442-7661</td>
<td><a href="mailto:YESILEVSKY@DOT.NYC.GOV">YESILEVSKY@DOT.NYC.GOV</a></td>
</tr>
<tr>
<td>Nancy Wright</td>
<td>202-444-7647</td>
<td><a href="mailto:newright@dot.nyc.gov">newright@dot.nyc.gov</a></td>
</tr>
<tr>
<td>Patrick Nestor</td>
<td>(212) 788-2672</td>
<td><a href="mailto:pnestor@dot.nyc.gov">pnestor@dot.nyc.gov</a></td>
</tr>
<tr>
<td>Arkadiya Kacan</td>
<td>718-433-3221</td>
<td><a href="mailto:akacan@dothtc.dot.nyc.gov">akacan@dothtc.dot.nyc.gov</a></td>
</tr>
<tr>
<td>Michael Harneit</td>
<td>718-433-3221</td>
<td><a href="mailto:MHarneit@DOT.NYC.GOV">MHarneit@DOT.NYC.GOV</a></td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)  
FROM: Ms. Theresa Fallon  
DATE: May 16, 2007  
SUBJECT: St. George, Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation  
Engineering Service Agreement for  
Design & Resident Engineering Services  
Contract No.: HBR1217  
NYC PIN: 84199MBBR594  
Stage II Project Agreement – No. 00C-18 / No. 00CR-2

Meeting: Coordination Meeting w/ NYCT Outside Projects  
Date & Time: May 10, 2007 @ 10:00AM  
Place: 2 Rector Street, 7th Floor  
Attendees: See Attached List

The meeting was held to finalize outstanding railroad and Force Account related issues. Specific items discussed were as follows:

Force Account

- NYCT and NYCDOT agreed to remove allowances for Work Trains in Section 1 of Exhibit G as well as from the Force Account Estimate. It is highly unlikely that the Contractor will need them and SIRTOA would have to hire forces to operate them.

- NYCT and NYCDOT agreed to remove any reference to the specific number of flaggers to be furnished at any one shift. Rather state “SIRTOA will furnish access protection of the site with flaggers as required”.

- M. Kuchuk stated that all flagging / diversion request should go through him at Monday morning meetings that will be held with the Contractor and Resident Engineer to go over required services.

- Flagging requests at this meeting will be for the week starting the following Monday. Diversion requests will require three weeks advance notice.
• All request and cancellations must still be given in writing.

• The Contractor will be notified on Wednesday as to whether he has the flaggers he requested.

• It was agreed by all parties to leave in the requirement that flaggers must be provided at all times when working on the station platforms. That may not be necessary but it will be up to SIRTOA to decide on a case by case basis.

• M. Kuchuk to forward NYCDOT a list of other projects that could potentially run concurrent with this project that would require coordination by the D/B Company such as the St. George Interlocking Project.

• M. Kuchuk to forward Transit’s lead removal specifications to WAI for their review and incorporation (as necessary) into the RFP. Specific questions to environmental work should be directed to Boris Goldshteyn of the NYCT-Capital Project Management Environmental Engineering Department.

• M. Kuchuk to revise the Force Account Estimate to reflect the current rate schedule for Authority Supplied Services and then forward P. Nestor the necessary paperwork to register the Force Account by the end of next week.

NEXT MEETING

No future coordination meetings with NYCT or SIRTOA are anticipated at this time.
<table>
<thead>
<tr>
<th>NAME (print)</th>
<th>AGENCY</th>
<th>PHONE #</th>
<th>FAX</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUKE DAVID</td>
<td>NYC DOT</td>
<td>212-227-4634</td>
<td></td>
<td><a href="mailto:derkev@ny.gov">derkev@ny.gov</a></td>
</tr>
<tr>
<td>RICHARD LYNKE</td>
<td>NYC DOT</td>
<td>646-252-5441</td>
<td>646-252-4613</td>
<td></td>
</tr>
<tr>
<td>ANTHONY KUCHN</td>
<td>Mn G</td>
<td>x 3653</td>
<td>x 4613</td>
<td></td>
</tr>
<tr>
<td>CHRIS SKLAVUNGKIS</td>
<td>NYC DOT</td>
<td>212-788-2078</td>
<td>212-788-1911</td>
<td><a href="mailto:csklavinakis@dot.nyc.gov">csklavinakis@dot.nyc.gov</a></td>
</tr>
<tr>
<td>PATRICK NESTOR</td>
<td>NYC DOT</td>
<td>212-788-2072</td>
<td>212-788-1911</td>
<td><a href="mailto:pnestor@dot.nyc.gov">pnestor@dot.nyc.gov</a></td>
</tr>
<tr>
<td>TAMARA BEENWISS</td>
<td>NYC DOT</td>
<td>212-447-4876</td>
<td>212-788-1911</td>
<td><a href="mailto:tbeenwiss@dot.nyc.gov">tbeenwiss@dot.nyc.gov</a></td>
</tr>
<tr>
<td>THERESA FAUCI</td>
<td>Mn I</td>
<td>973-541-9780</td>
<td>973-541-9780</td>
<td>fauscitestud.com</td>
</tr>
</tbody>
</table>
MEMORANDUM OF MEETING

TO: Ms. Chris Sklavounakis (NYCDOT)  
FROM: Ms. Theresa Fallon  
DATE: June 8, 2007  
SUBJECT: St. George, Staten Island Ferry Terminal Ramp Rehabilitation

Project: New York City Department of Transportation Engineering Service Agreement for Design & Resident Engineering Services  
Contract No.: HBR1217  
NYC PIN: 84199MBBR594  
Stage II Project Agreement – No. 00C-18 / No. 00CR-2

Meeting: Coordination Meeting with NYCDOT Bridge Painting Unit  
Date & Time: May 24, 2007 @ 10:00 AM  
Place: 2 Rector Street, 7th Floor Conference room  
Attendees: Chris Sklavounakis – NYCDOT D/B  
Patrick Nestor – NYCDOT D/B  
Ron Rauch – NYCDOT Painting  
Rita Gulberg – NYCDOT Painting  
Mark Lenkovskiy – NYCDOT Painting  
Theresa Fallon – WAI  
Rich Barbour – GRB Environmental  
Dan VanVoorhis – GRB Environmental

The meeting was held to discuss the cleaning and painting structural steel requirements for this project. Specific items discussed are as follows:

1. R. Rauch recommended specifying a Polysiloxane top coat over an epoxy primer and epoxy intermediate coat for the fascia beams and exterior columns and using a standard epoxy system for interior beams and columns. The advantages of this are:
   • Polysiloxane has very good color retention properties.
   • Polysiloxane has very high material costs but by specifying it only on the fascias and exterior columns where UV damage is an issue it has minimal impact on the overall project paint costs.
   • Also since the primer and intermediate coats are the same for both systems there should not be much of an issue in terms of increased application costs.
2. R. Rauch stated that there are currently three approved suppliers for this system
   - Carboline
   - International Paints
   - Ameron

3. Prior to the meeting R. Rauch / R. Gulberg provided WAI / GRB specifications for:
   - Paint System K (Epoxy Primer / Epoxy Intermediate / Polysiloxane Top)
   - Aluminum Epoxy Mastic Primer
   - Semi-Gloss, Low VOC, High Build Polyurethane sealer coat that is intended for use over the prime coat
   - Section 831 – Specification for Painting (Final version)
   - Section 832 – Specification for Lead Paint Removal (Draft Version w/ comments – WAI / GRB were requested to check back with the Painting Unit just prior to finalizing the RFP to see if the draft changes have been made official otherwise just put in latest official version and revise in an addendum if necessary)

4. R. Rauch stated that there is a new product on the market called Chlor-Rid that can be applied using a cold pressure wash that effectively neutralizes any chlorides on the steel. It has not been used by NYCDOT to date but other agencies have used it and the testing material provided by the manufacturer is very promising. C. Sklavounakis stated that she did not want to require it in the RFP but once the job is awarded the D/B Unit will look to have the Contractor try it out on an experimental basis and if found measurably beneficial possibly expand its use throughout the project area with the added cost covered under a change order.

5. R. Rauch stated that he would like to see a material Warranty against color degradation included in the contract if possible. Some paint manufacturers in the past have been willing but generally there are contractual / legal difficulties with actually including it in the contracts. C. Sklavounakis stated that based on her past experience she thought it would be very difficult to get a paint warranty included in the contract. Ultimately if you want to ensure a good quality paint job it comes down to getting a good REI that will enforce the specifications.

6. R. Rauch stated that the recommended paint color is to be approved by the Art Commission. Currently they can select from only the following five colors:
   - Munsel Grey (Federal Color No. 26173)
   - Dark Green (Federal Color No. 34092)
   - Blue (Federal Color No. 15095)
   - Pulaski Red (Custom color made from sample)
   - Deep Cool Red (Custom color made from sample)
Generally the paint color does not impact costs so there really is no need to recommend a color at this stage. The only possible scenario that would impact cost would be if the Art Commission selected Munsel Grey. If this were the selected color then there would be no need to go with the more expensive Polysiloxane top coat since light grey color does not fade as much as the others.

C. Sklavounakis stated that she did not want to specify any color at this point and that the RFP should be prepared assuming the most expensive option.

7. T. Fallon stated that she had received some project specific specifications from NYC Transit regarding lead paint removal on RR ROW. WAI / GRB will go through them to see if there is anything above and beyond NYCDOT requirements (Section 832) and include them in the RFP.

NEXT MEETING

At this time it is not anticipated that another meeting will be necessary on this topic. If further coordination is needed it is expected to handle by phone or e-mails.
SPECIAL PROVISIONS FOR CONSTRUCTION

1. MAINTENANCE AND PROTECTION OF TRAFFIC

1. General

Maintenance and protection of traffic shall be provided in accordance with Section 619 of the New York State Standard Specifications, the New York State Manual of Uniform Traffic Control Devices, Manual of Bureau of Traffic NYCDOT and any Provisions contained in the Plans and/or proposal of this contract.

2. Changes to the Traffic Control Plan

Prior to the start of work, the Company may submit any proposed changes to the Traffic Control Plan to the Resident Engineer for approval. Any Change which alters the basic concept of the plan must be approved by the NYC Department of Transportation or its designee.

3. Roadway Closure

The Company should obtain all required permits and licenses prior to closing any roadway, sidewalk and/or bridge in order to minimize any project delays.

4. VMS Signs

The Company must provide a minimum of 3 portable VMS signs for the duration of the construction activities. Actual location of the VMS will be determined upon submission of MPT plans and in coordination with NYCDOT.

2. STANDARD AND LIST OF ITEMS

Unless otherwise noted, all Sections, Subsections, Articles or subarticles as referred to herein within these specifications shall be those of the New York State Department of Transportation’s most current Standard Specifications for Construction and Material Metric Units and revision to the standard Specifications (A-Pages) included in the Proposal Book. However, this neither implies the State's involvement in any testing and approval of materials, nor in the supervision of construction. All references, therein to the "Department's" Materials Bureau, "Regional Engineer," etc., shall be deemed to mean the "Engineer-in-Charge". Where any reference is made on the plans, specifications or proposal to the "State" or any of its officials, the Company shall substitute the City of New York Department of Transportation or any of its appropriate officials. Those items which have three (3) digits preceding the decimal (203.07M, 555.0104M, etc.,) are standard items of New York State Department of Transportation's current Standard Specification. Other items, those with five (5) digits followed by a decimal or with a NYC prefix are non-standard items and can be found within these Specifications.
MEMORANDUM OF UNDERSTANDING

Re: Contract No. HBESA00C, PIN # 84199MBBR594
Stage II Project Assignment, No. 00C-18
Registration No. 20010021418
FMS ID: HBR1217
Engineering for Rehabilitation of Ramps at the SI Ferry Terminal

Whereas, NYCDOT is undertaking the rehabilitation of the ramps at the St. George, Staten Island Ferry Terminal in a Design-Build Contract scheduled for advertisement in the spring of 2007;

And whereas several of the ramps in this contract span over Staten Island Rapid Transit Operating Authority’s (SIRTOA) St. George Station and Interlocking;

And whereas it is the intention of the Design-Build Contract to address safety as well as structural deficiencies;

And whereas SIRTOA has brought it to the attention of NYCDOT that the underdeck lighting on the ramps in the vicinity of SIRTOA’s tracks is in disrepair and currently does not provide adequate illumination for SIRTOA’s employees to safely work on and/or cross the tracks;

And whereas SIRTOA has offered to pay for the future maintenance and operation of a new upgraded underdeck lighting system provided NYCDOT includes for its design and construction in the Design-Build Contract scope of work;

Now hereby, this day the 27th of December, 2006 all parties agree as follows:

NYCDOT will fully fund the design and construction of an upgraded underdeck lighting system in the area of the St. George Station and Interlocking while SIRTOA will bear the cost of all future maintenance and operation of the system once the Contractor has completed installation and the work has been deemed acceptable by NYCDOT or its designated agent.

Agreed upon:

Chris Sklavourakis, PE
Director
Design-Build/Emergency Contracts
New York City Dept. of Transportation

Samuel Kolta, PE
Director
Engineering and Capital Programs
Staten Island Rapid Transit
Operating Authority

1/31/2007
NEW YORK CITY
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

P.I.N. 84108SIBR330

Contract No. HBR1217

REQUEST FOR PROPOSAL
REHABILITATION OF RAMPS STRUCTURES AT THE
ST. GEORGE, STATEN ISLAND FERRY TERMINAL