1. All work shall be performed in accordance with New York State Department of Transportation, Office of Engineering Standard Specifications, Construction and Materials dated January 2, 1995 with addendum and modifications thereto; and Design Specification shall be in accordance with New York State Department of Transportation Standard Specifications for Highway Bridges with all provisions in effect as of August, 1999.

Design Live Load: MS18.

Design Unit Stresses: Structural Steel: ASTM A36M, F_y = 250 MPa unless otherwise indicated.

2. The Contractor's attention is directed to the fact that, due to the nature of this maintenance painting project (including the structural steel repairs work and the construction of the added drainage trough under the finger type deck expansion joint at Pier Tower 88 indicated herein), the exact extent of work cannot always be accurately determined prior to the commencement of work. The contract documents have been prepared based on field inspection and other information available at the time. Actual field conditions may require modifications to construction details and work quantities. The Contractor shall perform the work in accordance with the field conditions to the satisfaction of the Engineer.

3. All bidders should inspect the bridge sites prior to submitting bids to verify the field conditions which may be encountered and the nature of the work to be done under this contract. No additional compensation will be due the Contractor for failure to include all items, labor, materials and equipment costs necessary to complete the work.

4. Wherever Structural Steel Repair is indicated in the Contract Documents, the Structural Steel Repair work shall be coordinated with work for cleaning and painting (Item 18573.1015M) and shall be performed to the satisfaction of the Engineer after cleaning and removal of existing paint and prior to the commencement of the painting work. The Contractor shall prepare and submit for approval the detailed shop drawings prior to its fabrication and its construction. Contractor shall make accurate field measurements prior to preparation of shop drawings. The requirement indicated herein for Structural Steel Repair is also applicable to the construction of the added drainage trough under the finger type deck expansion joint at Pier Tower 88.

5. Where new structural steel is to be attached to existing steel, the contacting surfaces shall be cleaned to bare metal, removing all dirt, rust, paint, mill scale, burrs and any other foreign material prior to assembly. All paint shall be removed under Item 18573.1015M.

6. All new structural steel to be ASTM A36M unless otherwise noted.

7. All bolts shall be 22mm diameter, ASTM A325M, Type 1, high strength bolts in 24mm diameter open holes unless otherwise noted.

Structural steel used for the Trough and Trough Supporting Plates, Splash and Shim Plates for the added drainage trough below the finger type deck expansion joint at Pier Tower 88 shall be ASTM A36M steel and shall be galvanized in accordance with ASTM A123M Zinc (Hot-Dip Galvanized), and meet the procedures of Section 719-01 Galvanized Coatings and Repair Methods.

Stainless steel bolts and washer used for the added drainage trough below the deck expansion joint at Pier Tower 88 shall meet material specifications Section 715-16, Stainless Steel Connecting Products. Cost for the work and material for the added drainage trough (including the Trough Support Plates, the Trough Plates, the Splash Plates, the Shim Plates, the stainless steel bolts and stainless steel washers) shall be paid under Item 564.10M, Structural Steel Replacement.

8. Use of welding in steel repairs other than that shown on these plans will not be permitted. All welding shall be in accordance with the New York State Steel Construction Manual (SCM) – 1984 Edition.
9. The Contractor shall be responsible for storing the paint removal waste within the designated "staging and storage" area(s) indicated in the contract documents and disposing the waste within 45 calendar days from the time waste was generated. This operation should be carried out as per existing laws and regulations of the City, State and Federal agencies. Cost for this operation shall be included in Item 571.01M. (Should the Contractor opt to use areas other than those designated, he will be responsible for securing all necessary permits from the agency having jurisdiction subject to the approval of the Engineer).

10. The Contractor shall be responsible for proper collection, storage, and removal of all wastes generated by the cleaning and painting process.

11. Adequate access to work areas must be provided for the Engineer by the Contractor. The access provided may be the same or similar to what is used by the Contractor. However, the Engineer's access must be of such construction so as to allow the Engineer to move from place to place to inspect work under progress without excessive delays. Man-lift shall be provided for the Engineer or his designer for inspection work. The cost for this work shall be included in various items of work in the Contract.

12. The Contractor shall perform all work with care so that any materials which are to remain in place or which are to remain the property of the State and/or New York City, or any other agency, will not be damaged. If the Contractor damages any materials which are to remain in place or which are to remain the property of the State of New York and/or New York City, or any other agency, the damaged materials shall be repaired or replaced in a manner satisfactory to the Engineer, at no expense to the State of New York, the City of New York, or any other agency.

13. Whenever items in the contract require materials to be removed and disposed of, the cost of supplying a disposal area and transportation to that area shall be included in the unit price bid for those items. Locations of such areas shall be submitted to the Engineer for approval.

14. During removal operations, and/or the cleaning and painting process on the bridge, the Contractor shall not be allowed to drop waste concrete, debris and other material to the area below the bridge except where the plans specifically permit the dropping of materials. Platforms, nets, screens, or other protective devices shall be used to catch the material if the Engineer determines that adequate protective devices are not being employed, the work shall be suspended until adequate protection is provided.

15. The cost of furnishing, installing, maintaining, removing and disposing of all platforms, nets, screens, or other protective devices shall be included in the unit bid price for the appropriate items of the contract.

16. All materials or debris falling from the deck, abutments and piers to the areas below and adjacent to the bridge whenever construction operations are undertaken shall be removed and disposed of by the Contractor at the end of each work day or A.O.B.E. as necessary at no extra cost to the State.

17. All areas disturbed by the Contractor with or without authorization by the Engineer shall be restored by the Contractor, as ordered by the Engineer, at no expense to the State.

18. It shall be the Contractor's responsibility to conduct the contract operations and take the necessary precautions to prevent interference with or damage to utilities or other facilities during the course of construction.

19. In the event the Contractor damages an existing utility service causing an interruption in said service, the Contractor shall immediately arrange for service to be restored at the Contractor's expense and may not continue his work operation until service is restored, unless otherwise directed by the Engineer.

20. The location of the Contractor's staging area shall be as designated on DWG. No.s 9 and 11.
21. The Contractor shall take the necessary precautions to avoid filling catch basins within the contract limits with debris during the contract operations. In the event the Contractor’s operation damages or blocks the drainage system, the Contractor shall at his/her own expense immediately repair or restore the drainage system as directed by the Engineer.

22. The Contractor shall be responsible for maintaining the completed project work for the duration of the contract as required by NYS DOT standard specifications for construction and materials.

23. The quantities given are solely for the purposes of facilitating uniform comparison of bids, for estimating purposes and for indicating work locations. The quantities shown are not to be considered by the Contractor as a warranty or representation by the State of the exact quantities of such work to be performed. Only major drawings, such as typical plans and sections are provided in this document for illustrative purposes only and are not intended to show the exact details and configurations of the structures. Some detail drawings for original bridge construction and subsequent construction modifications are available from the NYS DOT Region 11 for inspection and reference. The actual quantities for compensation shall be based on the actual quantities executed as measured in field and as directed by the Engineer.

24. No direct payment will be made for work called for by notes on the plans, or under the heading general notes, special notes, or maintenance and protection of traffic notes, unless payment is specifically indicated by item number. The cost of work not specifically called for by item number shall be included in the unit prices bid for the various items in this contract.

25. The Contractor will be required to maintain vehicular traffic during all phases of the work as indicated on the contract plans and as per the NYCDOT or OCMC work permit stipulations included in the SPECIAL NOTES section of this proposal.

26. The Contractor is advised that additional notes will be found on subsequent sheets of the contract plans and such notes, while pertaining to the specific drawings they are placed on, also supplement the general notes listed herein.

27. Where proposed work as shown on the contract documents differs from that shown on the standard specifications or standard sheets, the information as detailed on the contract documents shall govern.

28. The Contractor shall examine and verify in the field all existing and given conditions and dimensions with those shown on the contract documents. If the field conditions and dimensions differ from those shown on the contract documents, the Contractor shall, after notifying the EIC, use the field conditions and dimensions and make the appropriate changes to those shown on the contract documents as approved by the Engineer. All field conditions and dimensions shall be so noted on the drawings as submitted for approval.

29. The temporary signs shall be ground mounted; or whenever possible shall be mounted on an existing utility pole as ordered by the Engineer. Cost shall be included in Item 619.01.M.

30. The Contractor shall conform to the appropriate Federal, New York State and New York City environmental guidelines relative to the protection of the public from lead paint removal waste.

31. Any work begun, but not completed to Top Coat (Finish Coat) before winter shutdown must be re-cleaned and repainted at no additional cost to the State. Contractor is advised to schedule the work accordingly.

32. All structural steel, (including girders, stringers, floorbeams, columns, pier tower truss members, bearing grillages, footings, grillages, railings, fascias, downspouts, steel curbs, etc.) shall be painted unless specifically noted otherwise.

33. All underdeck utility lines which have been previously painted shall be cleaned and repainted.
34. Welding or drilling existing bridge members to support the containment structure, scaffolding, etc., which may potentially damage or overstress any portion of the bridge, will not be allowed.

35. If a structure has a Bridge Identification Number (B.I.N.) plate or Bent Identification Plate attached to it, it shall be the Contractor's responsibility to protect them during operations of cleaning and painting, or remove and remount them, after operations are completed.

36. All signs mounted on the bridge which impede the painting of the steel must be removed and reinstalled. Care must be taken not to damage the sign. The Contractor shall perform any necessary minor repairs to the sign (replacing bolts, brackets, etc.) to the satisfaction of the Engineer, the cost of which shall be included in various items of work. The Contractor shall also be responsible for maintaining adequate signage should any sign need to be removed. The cost of any temporary signs necessary shall be paid for under Item 619.02M.

37. The work shall be progressed in an as efficient and expeditious manner as possible. The Engineer may order the Contractor to reopen lanes if in the opinion of the Engineer adequate labor and equipment are not being utilized.

38. All existing steel shall be cleaned and painted in strict conformance with the following:

Item No. 18573.1015M - Field Cleaning and Painting - Total Removal (Spray Prohibited). Under Item 18573.1015M, paint shall be applied by using brushes or rollers, except that for trusses, pier towers, and built-up bracing members, and those members in tight spaces inaccessible to brushes or rollers, paint application by spray method within a fully enclosed Class A containment will be allowed.

39. The treatment, handling and disposal of paint debris on steel surfaces shall be in strict conformance with the following:

Item No. 571.01M - Treatment and disposal of paint removal waste.

40. The containment system shall be in strict conformance with the following:

Item No. 18570.1503M - Class A Containment System for Paint Removal.

The Contractor shall prepare and submit for approval the detailed working drawings and design calculations, signed and sealed by a New York State Licensed Professional Engineer (employed by the Contractor), for his proposed containment systems.

41. All existing paint on steel members shall be assumed to contain lead. For paint removal operations, the Contractor's attention is therefore especially directed to section 107-05 (safety and health requirements) of standard specifications.

42. The Contractor shall not point sign structure supports, drainage system, utility lines which have not been previously painted and signs mounted on the bridge.

43. The Contractor shall include the cost of lighting and heating the containment structure(s) under Item 18570.1503M Class A Containment System for Paint Removal.

44. The Contractor shall not store equipment, framing components of containment structures or shielding, APT devices (e.g. temporary concrete barrier, temporary construction signs) directly over catch basins or manhole covers. These utility structures must remain accessible 24-hours a day for maintenance or an emergency.

45. The Contractor shall seek permission from Brooklyn Union Gas Co. sufficient time ahead of actual work schedule to access any work premises, including, if necessary, next to the bridge. The permission shall include the time and dates the premises may be used along with a drawing showing location(s).

46. The Contractor shall establish a lead health safety program for protection of workers exposed to lead paint particles during the cleaning operations. The program's cost shall be paid under Items 18570.01M, 18570.02M, 18570.03M and 18570.04M.
47. In the event the Contractor observes any physical conditions which are sufficiently deficient as to seriously affect the safety of the public or the persons employed for the construction of the project, the Contractor shall notify the Engineer immediately before the site is disturbed and before the affected work is performed. Any bridge deterioration or distress condition encountered during the Contractor's operation should be immediately reported to the Engineer. Deterioration of any sealing/shielding should also be reported to the Engineer. The Contractor may be ordered to stop work in a localized area of the bridge or completely in order to make necessary repairs to the structure.

48. The Contractor shall coordinate with the N.Y.C. Department of Sanitation in order to minimize the disturbance of sanitary operations during construction. The Contractor shall coordinate with the Chief Engineer, Mr. Richard Pfaff at (212) 837-8006.

49. The Contractor is responsible to provide his own security measures for the staging areas and work sites. The price for the Contractor's security measures shall be included in the bid for various items in the contract and no separate payment shall be made.

50. Prior to restoration of damaged landscape, the Contractor shall notify the landscaping unit in the Department of Bridge & Arterial Maintenance, 2 Rector Street 4th Floor, New York, NY 10006. In addition, Arterial Maintenance shall be contacted for a site meeting before the Contractor occupies any ROW for work or staging/storage.

51. During the course of construction, the Contractor shall conduct his operations in such a manner to prevent any damage to the creek from pollution by debris, sediment, wastes generated by the cleaning and painting process, or other foreign material, or from manipulation of equipment and materials near the creek. He shall not return directly to the creek any water, which has been used for wash purpose or other similar operations.

52. All dimensions given between movable parts or across expansion joints are for normal conditions with full dead load at temperature (20 degree C), unless otherwise noted.

ABBREVIATIONS:

ADJ  ADJACENT
APRC  APPROACH
APRX  APPROXIMATE
AOBE  AS ORDERED BY THE ENGINEER
AVN  AVENUE
BEA  BEAM
BOT  BOTTOM
CTOC  CENTER TO CENTER
CL  CENTER LINE
CLR  CLEARANCE
DIA  DIAMETER
DAPHR  DIAPHRAGM
DIM  DIMENSION
DWW  DOWN
DWT  DRAWING
E  EAST, EXPANSION
EE  EACH
EF  EACH FACE
EL  ELEVATION
EXIST  EXISTING
EXP  EXPANSION
F  FIRE, FIXED
FF  FAR FACE
FIX  FIXED
FSD  FAR SIDE
FT  FOOT
GVN  GALVANIZED
H  HIGH
HRZ  HORIZONTAL
ID  INSIDE DIAMETER
INV  INVERT
JN  JOINT
L  LONG, LEFT
LG  LONG
LNG  LONGITUDINAL
M  METER
MAX  MAXIMUM
MIN  MINIMUM
MHW  MEAN HIGH WATER
MLW  MEAN LOW WATER
MM  MILLIMETER
NB  NORTHBOUND
NE  NORTH EAST
NF  NEAR FACE
MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. All maintenance and protection of traffic work shall conform to the New York State Manual of Uniform Traffic Control Devices (MUTCD) except as modified by the plans and/or proposal.

2. The Contractor shall notify the Engineer, New York City Department of Transportation Office of Construction Management & Coordination at (212) 467-9539, the Detour Implementation Group at (212) 442-2761 or (212) 442-7655, the New York City Police Department Traffic Division at (212) 229-2500, the New York City Fire Department Operations Division at (718) 694-2082, the New York City Emergency Medical Services, all local hospitals, ambulance, and other emergency services, all pre-appropriated lanes closures, proposed ramp closures and detours, or any work that might affect the visibility or access of the fire or Police Departments, at least two (2) weeks in advance of their implementation and two (2) working days prior to commencing work operation, except in case of emergency. Notifications shall be in writing in the form of the concurrence of the Engineer.

3. If at any time in the opinion of the Engineer, conditions shall warrant modifications to the schemes shown on this or any other maintenance of traffic drawings, the Contractor shall perform the modifications including re-opening of any lane closures, on an emergency basis A.O.B.E.

4. No new detour is to be placed in operation on a Friday, Monday or any day proceeding a holiday unless otherwise approved in writing by the Engineer and with concurrence of the New York City Department of Transportation. (See Note 32 for additional details).

Holiday Embargo:
A. In order to facilitate the movement of vehicular traffic during holidays and on three-day holiday weekends, the NYCDOT reserves the right, without penalty, to modify the Contractor's operations during the period beginning 12:00 AM of the proceeding day of the holiday. Holidays included under this subsection are as follows:
B. When directed by the Engineer, the Contractor shall comply with the following requirements:
   i. Access for the traveling public shall be provided to all existing facilities within the Contract limits.
   ii. Traffic restrictions that permit the Contractor to work in lanes used during rush hours may be canceled.
C. All costs incurred in complying with the above requirements shall be included in the price bid for the appropriate schedule of payment items.
D. A "Holiday Construction Embargo" will be in effect on Gridlock Alert Days from mid-November (the exact date will be published each year in the New York City Department of Transportation's OCMMC yearly Holiday Embargo release, there are approximately ten (10) in January 2nd). During this period, no lane or ramp closures will be permitted from 6:00 AM to Midnight except by written permission from the OCMMC. This stipulation supersedes all others in this permit.

5. Work cannot be performed during the New York City's S Borough Bike Tour and New York City Marathon, unless granted special permission by the New York City Department of Transportation, Office of Construction Management & Coordination.

6. The location of advance lane closing signs shall be placed in advance of any potential back up which may occur as a result of this lane closure. In addition, advance warning lane closure signs shall be placed in advance of any ramps, which are located before the actual lane closure. All signs shall be located A.O.B.E. All costs shall be included in item 619.02M.

7. All existing New York City guide and regulatory and/or warning signs which are rendered inapplicable by construction activity and conflict with construction signs to be installed shall be covered and paid under item 619.01A, Basic Maintenance and Protection of Traffic.

8. All construction signs shall have an orange background and black letters and borders (reflectorized if used at night), conforming to subsection 619-2.02 of NYCDOT Standard Specifications and MUTCD Standards.

9. In reference to the NYS Manual of Uniform Traffic Control Devices, the following stipulations shall apply unless otherwise specified by the Engineer:
   i. Where signs are shown in both diamond and rectangular shapes, only diamond shapes will be permitted.
   ii. Where signs are shown in alternate sizes, the largest size must be used unless otherwise specified by the Engineer, or otherwise shown in the plans.

10. All construction signs shall be hinge or flip-type and folded when the work they pertain to is not in progress. Corners of signs shall not be cut in any case. The Contractor shall be responsible to identify his construction signage. The identification shall include the Contractor's name, the contracting agency's name (NYCDOT) and the Contract Number. The identification shall be placed on the back of the sign. The lettering shall be 75mm high.
   - The Contractor shall submit the size and size of construction signs to the E.I.C. for approval before fabrication. The cost of this operation shall be included in item 619.01M, Basic Maintenance and Protection of Traffic.

11. Warning signs shall be located to provide adequate visibility distance to drivers. They shall not be blocked by foliage, roadway features, or other signs and traffic control devices. No stationary mounting of construction signs shall be permitted on utility poles or other roadside elements. For nighttime construction, sign placement shall also consider glare from light sources located behind the sign and low beam headlight patterns. Reflectorsized signs shall be oriented essentially perpendicular to the direction of traffic. Where the warning sign can not be located to be visible under headlight illumination, other illumination shall be considered to enhance visibility or the sign shall be moved.

12. The bottom of temporary construction signs shall be a minimum of 2.1m above the travel pavemen on expressways and parkways, and the edge of the signs shall be a minimum of 0.6m clear of the travel lane, as shown or A.O.B.E. If placed in a narrow median or shoulder and the minimum 0.6m clear distance cannot be met, the Contractor may have the option of using rectangular signs if approved by the E.I.C. If the Contractor cannot install diamond or rectangular shaped signs with the minimum 0.6m clear distance, the bottom of the signs shall be a minimum of 3m above the travel pavement if there is between 0.6m and 0.0m clear distance from the travel lane. Otherwise, if the signs overlap the travel lane, the bottom of the signs shall be a minimum of 4m above the travel pavement.

13. All temporary signs for the Maintenance and Protection of Traffic shall be paid for under item 619.02M Construction Signs.

14. All construction sign designations are referenced from the M.U.T.C.D., unless otherwise noted.

15. The Contractor shall provide the following roadwork guide signs with M.U.T.C.D. #G11-1D and G11-1C at the contract limits in both directions of travel. Refer to the N.Y.S. Manual of Uniform Traffic Control Devices, page 254 for details regarding test, placement, etc.

16. Signs are to be displayed only during that stage of work to which they apply. All signs that are inconsistent with the traffic pattern are to be removed. Similarly, the appropriate signs must be completely in place and on display as a particular stage of work commences. This rapid transition may be accomplished by covering the sign panels with an opaque material A.O.B.E. Payment under item 619.02M, Construction signs.

17. NYCDOT standard signs may be purchased by the Contractor from the City Sign Shop (call NYCDOT DIG at 212-442-2761 for coordination assistance). Payment for these signs to be included in item 619.02M Construction Signs. The Contractor shall notify NYCDOT DIG 10 working days prior to the installation of parking restriction signs.
18. Under the Basic Maintenance and Protection of Traffic Item 619.014, the Contractor shall be required to perform maintenance cleaning of the work area within the bridge locations when ordered by the Engineer. Maintenance cleaning shall mean the removal and disposal of debris from any source, which in the opinion of the Engineer impedes the flow of traffic or storm water. This requirement shall not be construed to change the provisions of Article 619.1.02K Snow & Ice Control, and Article 619.1.02B – Drainage, of the NYSDOT Standard Specifications.

19. This highway (BQE) will not be designated "RESTRICTED HIGHWAY" under this Contract.

20. The Maintenance and Protection of Traffic schemes shown in the plans or proposal are to protect the traveling public. It shall be the responsibility of the Contractor to protect the workers. The cost of additional labor, material and equipment to protect the workers shall be included in the bid price for Item 619.01M, Basic Maintenance and Protection of Traffic. Where workers are in a closed lane or a shoulder on a highway, the Contractor shall use a shoulder vehicle with truck mounted attenuator (TMA) and flashing arrow panels in the "CAUTION" mode, except where shown otherwise.

21. The Contractor shall provide the Engineer, at least one week in advance, his proposed schedule for each week as it pertains to roadway channelization. The schedule shall include layout and signing as specified in the MPT sheets. Before implementation, scheduled layout shall be subject to modification by the Engineer. A copy of the new schemes will be sent to the NYCDO, Office of Construction Mitigation & Coordination. The Contractor shall perform this work in such a manner and sequence as to maintain traffic as shown in the plans and proposal.

22. The Contractor shall provide a flagger with appropriate signing (WB-22D) wherever work operations interface with traffic. Flaggers shall be properly trained and English speaking. Flaggers shall be required where arrow boards are indicated in the contract documents and at other locations A.O.C. Examples include, but not limited to, delivery/removal of materials, lifting operations, and other activities A.O.C. Cost of flagger is to be included in Item 619.01M and the cost of the signs are to be included in Item 619.02M.

23. The sole duty of the flagger shall be to direct traffic properly at all times. Flagger should not be used to move temporary signs or assist in other work and shall be positioned appropriately in advance of the work. Requirements of the N.Y.S.M.U.C.T.C.D. for hand signaling devices shall be met. Stop/Slow paddles shall be used rather than flags for most long-term flagging operations. Standard signaling procedures shall be followed as per N.Y.S.M.U.C.T.C.D. and Federal M.U.C.T.C.D. Clean, well-lit signaling cones and traffic cones shall be carried by flaggers. Flagging stations shall be located to provide adequate sight distance and visibility. Adequate escape paths shall be provided to the extent possible for the safety of flaggers and for the safe recovery of drivers who fail to respond to flagger directions. Any flagging deficiencies shall be corrected immediately, or the Contractor shall be required to shut down his operations until a competent flagger is obtained. All flaggers employed shall be properly trained and NYWMA certified.

24. The Contractor shall be required to provide flashing arrow boards IN ADDITION to flag persons where indicated in the contract documents. Flashing arrow boards shall be provided for under Item 619.030M.

25. Lane closures shall be started to provide optimum visibility, i.e., before curves and berms and should be located away from other conflict points such as on-ramps and intersections whenever possible. Also, closures shall be started as early as possible to avoid bridges and underpasseses and other locations without available escape paths.

26. The concurrent closures of left and right lanes shall not be permitted within a 3000 m distance between consecutive closures in the same travel direction, except as modified by special notes in the proposal.

27. When operations require one or more vehicles to be stopped on (or partially on) a roadway travel lane or shoulder, M.U.C.T.C.D. Section 300.3.1, iv (Short Duration Stationary Work) and Table 301-1 (Advance Distance) shall apply, as well as one of the following figures (as appropriate):

- 302-3C Work in 1-Lane of Multi-lane Roadway.
- 302-B.A Explanat of Traffic Control for 1-Lane Sections on 2-Lane 2-Way Highway, Short Duration.
- 302-9A Shoulder Work Area.
- 302-12A Examples of Traffic Control for Work Areas on 1-Way Roadways, Short Duration.
- 302-13 Examples of Traffic Control at Short Duration Work Areas on 1-Way Roadway.
- 302-14 Examples of Traffic Control at Short Duration Work Areas on 1-Way Roadway.

For situations not covered by any of the above figures or attached traffic schemes, the Contractor shall submit a maintenance and protection of traffic plan for approval of the Engineer-in-Charge and NYCDOT, prior to start of work at the site in question. Length and width of the work zone shall remain a minimum consistent with the safety aspects of the situation.

28. Permissible lane closure hours are as follows:

A. Closure of one of three lanes, in either direction of the Brooklyn-Queens Expressway, to vehicular traffic during the following hours:
   (a) Daily, Monday night to Friday morning (excluding holidays) from 10 PM to 5 AM
   (b) Saturdays from 11 PM Friday to 6 AM Saturday
   (c) Sundays from 11 PM Saturday to 9 AM Sunday

While maintaining two (2) lanes open to vehicular traffic.

B. Closure of two of three lanes, for only one direction at a time of the Brooklyn-Queens Expressway, to vehicular traffic during the following hours:
   (a) Daily, Monday night to Friday morning from 12:01 AM to 5 PM
   (b) Saturdays from 1 AM to 6 AM
   (c) Sundays from 1 AM to 9 AM

The above two lane closure hours are allowed for installation and removal of shielding or containment as well as cleaning and painting of the mainline partial areas in the center lane area.

C. The Contractor may use the curb lane on local streets under the roadways noted above. Generally, the Contractor may also use a travel lane on local streets as required, while providing a minimum of one 3.3m lane for each direction of traffic on the street. The number of traveled lanes shall not be reduced by more than one (1) in each direction.

29. All open lanes shall have a 3.3m minimum width. A minimum of one lane shall be open at all times during the cleaning hours.

30. The travel lane shall be swept clean by the Contractor before the lane is reopened to traffic.

31. When working on the median with only one speed lane closed the Contractor shall place cones along the gutter line of the opened speed lane spaced at not more than 12m intervals for the entire length of the work zone.

32. When a holiday falls or is observed on the day before or after a weekend, the Contractor will not be allowed to close any lanes in either direction on any Highway from noon on the last business day to 6AM on the following business day at which time the original stipulations are once again in effect. The holidays included under this restriction are as follows:

- New Year's Day, Memorial Day, Independence Day, Labor Day, Christmas Day and Thanksgiving Day (for this holiday the restriction begins on Wednesday noon and extends to Monday at 6AM)

When a holiday falls midweek (Tues., Wed., or Thur.) or on a Saturday (and is observed on that day), the Contractor will not be allowed to close any lanes in either direction on any Highway from noon on the prior business day to 6AM on the following business day at which time the original stipulations are once again in effect. The holidays included under this restriction are as follows:

- New Year's Day, Independence Day, Christmas Day, Mother's Day
33. The Contractor shall notify the New York City Department of Transportation's Situation Room Hot Line at (718)442-7090, Transcom at (800)6FAC-HIC, local police precinct, NYS/Ph\C at (718)765-6756, local fire house and the Chief of Emergency Medical Services at (718)416-7100, two (2) hours prior to his/her proposed traffic lane reductions or street closings for any purpose. The Contractor shall also immediately notify the Situation Room upon reopening and in the event of an emergency condition.

34. Storages of materials and equipment shall not be permitted within nine (9) meters (30 feet) of the travelled way on the highway except in the designated storage areas.

35. The Contractor shall not transport equipment across the highway, at grade, except during allowable work hours. Crossing shall be accomplished with a minimum time of five (5) minutes, at intervals spaced to avoid excessive back up of traffic.

36. It is the responsibility of the Contractor to furnish, install, maintain and remove all signs and traffic control safety devices.

37. All material and equipment not in use including employee's cars, shall be stored or parked at least 9.0m from the edge of the travel way, or as approved by the Engineer.

38. The Contractor shall comply with the Industrial Code of the State of New York Part 5.5 Retail relating to construction. Additionally, the Contractor shall similarly notify the owners of overhead cables or other electrical or street lighting equipment in the area of his/her operation.

39. Concurrent with construction work of this contract, other projects on this and another adjacent highways may be under construction. The Contractor to be familiar with the scheduling of those projects and schedule his activities accordingly. To facilitate the flow of traffic, the permissible work hours may be modified as deemed necessary by the New York City Department of Transportation.

40. The Contractor shall be responsible to provide notification to the local community board and Borough President’s Office ten (10) days prior to the commencement of work (in conformance with Section 86 of the New York City Charter). Proof of notification must be filed with the Office of Construction Mitigation and Coordination prior to the commencement at work.

41. No deviation or departure from these stipulations will be permitted without the prior written approval of the Department of Transportation. Request for such modifications shall be submitted to the New York City Department of Transportation, Office of Construction Mitigation and Coordination, a minimum of ten (10) days in advance.

42. For nighttime operations, the work site shall be illuminated according to the specifications of Item 15619.6730A-M: Lighting for nighttime operations. The Contractor is required to submit a lighting plan to the E.I.C. at least 30 days prior to the start of the nighttime operation. Under this Item, the entire area of construction operation shall be lighted to a minimum of fifty lumens per square meter (level I). The entire work area involving loop installation, wiring & other electrical works shall be lighted to level II and a minimum of 200 lumens per square meter (level III) in accordance with the specifications. The Contractor shall also provide the Engineer with a suitable Photometer for verification of such illumination and its uniformity level. The Contractor shall be responsible for maintaining all temporary lighting during the construction period. Initially, all lights shall be left on for 24 hours in order to verify their performance.

43. For nighttime operations, all channelizing devices for lane closures, lane closure toppers and tangents shall be spaced as specified in section 619.2.12C of the specification entitled "Maintenance and Protection of Traffic during nighttime operations". Also, spacing of channelizing devices at intersecting ramps and gates shall be reduced as specified in 619.3.13C. Lanes closed by channelizing devices are to be reinforced by two drums placed transversely across the lane. The devices should be positioned to allow passage of construction traffic; however, they may be temporarily omitted where required by work operations. Work specifically scheduled to occur after sunset and before sunrise, the Contractor shall follow the requirements of Section 619.1.15 and 619.3.13 of the Standard Specifications and its addenda.

44. The lane closures schemes herein specified are to be utilized for daytime applications. For long term or overnight operations, the Contractor shall substitute all cones with drums. The first two channelizing devices at the beginning of lane closures and shoulder closures shall be filled with amber lights in accordance with N.Y.S./M.U.T.C.D. Section 294.3. In addition, the Contractor shall observe the following:

A. Type A (low intensity) or Type B (high intensity) flashing warning lights are to be used as the first two lights in a longitudinal series and for marking isolated hazards.

B. Type C (low intensity) steady burning warning lights may only be used on temporary concrete barrier or other non-reflective barriers located close to travel lanes. They are not to be used on reflectorized channelizing devices unless justified by reduced visibility or heavy fog.

C. Type A and C shall be used for nighttime applications. Type B shall be used for daytime applications, and it may be used at night where the channelizing devices are left in place during daytime and where additional emphasis is desirable.

45. During nighttime construction, all channelizing devices shall be equipped with reflective sheeting meeting the requirements of the N.Y.S./M.T.C.D. Standard Specification and M.U.T.C.D.

46. In addition to the requirements stated above for nighttime operations, the Contractor is to follow all other applicable requirements specified in Bi 95-003 entitled "Requirements for maintenance and protection of traffic during nighttime construction".

47. The Contractor’s attention is drawn to the fact that flashing beacon shall be required on the temporary construction as indicated on the plans or A.O.B.E.

48. During the periods of placement, relocation and removal of barriers, cones, or other delineation devices, the Contractor shall provide flaggers A.O.B.E. Construction of barrier lines shall proceed in the direction of travel wherever possible.

49. The Contractor shall furnish and install temporary enclosures the immediate site of his cleaning and painting operations to assure complete protection of the general public and property, both on and below the roadway against possible damage from scraping, paint drippings, wind blown paint, dust, concrete, etc. The permit, if granted, does not constitute approval of either painting or paint removal methodology. All signs and signals shall be protected during the day with clean and transparent covering.

50. The Contractor, in the cleaning phase of the cleaning and painting activity, must conform to the appropriate Federal, State and City Environmental Guidelines relative to the protection of the public from the residue of that activity.

51. When water is being used at the work site for any purpose, the Contractor is required to insure, through any and all appropriate measures, that the water does not freeze on the roadway or sidewalks. The Contractor will be responsible to maintain a clear and safe travel environment.
NOTES:

1. The schemes depicted on this sheet shall apply to two, three and four lane - one way roadways.

2. The lane closure taper length, L, shall be in accordance with the M.I.S.O.T. Table C. Sections 262.22 and 262.23. For shoulder closure, the taper length shall be equal to 1.3L; for nighttime applications, L shall be equal to 225 m.

3. The shadow vehicle with TMA and the flashing apron panel shall be located a distance upstream of the work area, according to the following criteria:

<table>
<thead>
<tr>
<th>Speed Limit or Operating Distance</th>
<th>D from Work Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>55</td>
</tr>
<tr>
<td>70</td>
<td>40</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

4. When site conditions do not permit the desired 225 m longitudinal buffer space, this length may be reduced. The desired minimum value is equal to the posted speed plus 7.5 m.

5. The work zone advisory speed limit shall be 40 mph unless otherwise determined by the engineer.

LEFT TWO LANES CLOSURE

RIGHT TWO LANES CLOSURE

REVISIONS

<table>
<thead>
<tr>
<th>By</th>
<th>Appro. Date</th>
<th>Revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

APPROVED SIGNATURE ON FILE

REG. DESIGN ENGINEER

DATE

APPROVED SIGNATURE ON FILE

REG. TRAFFIC ENGINEER

DATE

NOTE:

See trig. no M-1 for legends.

MAINTENANCE AND PROTECTION OF TRAFFIC - 11

STATE OF NEW YORK

DEPARTMENT OF TRANSPORTATION

(Stamp)
OPEN EXIT RAMP WITH RIGHT LANE CLOSED

OPEN ENTRANCE RAMP WITH RIGHT LANE CLOSED

NOTES:
1. THE MPLT SCHEMES AT EXIT AND ACCESS RAMPS SHOWN ON THIS SHEET ARE THE REQUIRED TRAFFIC CONTROL AS CONFINED TO THE AREAS IN THE VICINITY OF ON/OFF RAMPS. FOR ADVANCE WARNING SIGNS, DETOUR ROUTES AND SIGNAGE, AND OTHER TRAFFIC CONTROL ELEMENTS FOR THE SPECIFIC RAMPS WITHIN THE PROJECT LIMITS, SEE OTHER MPLT DRAWINGS.

2. SEE DWG NO. MPT-4 AND MPT-5 FOR CLOSURES.


5. THE YIELD SIGN SHALL BE REPLACED WITH A STOP SIGN IF NO ADEQUATE ACCELERATION LANE EXISTS FOR THE ENTERING TRAFFIC. THE STOP SIGN SHALL HAVE TWO TYPE 8 WARNING LIGHTS WITH RED LENSES.
THRU-TRUSS ELEVATION

NOTES:

1. PANEL POINT U2m TO U2m LENGTH IS APPROXIMATE TO MAINTAIN 4.9m MIN. VERTICAL CLEARANCE.

2. ENDS OF THRU-TRUSS TO BE DONE WITH ONE LANE CLOSURE AT A TIME.
SECTION A-A (U₂ - U₆)

NOTE: CONTAINMENT ENCLOSURES FOR SWAY FRAME AND TRUSS SIDES NEED NOT BE SIMULTANEOUS.

SECTION B-B

PORTAL (U₁)

CONTAINMENT ENCLOSURE
ONE LANE WIDTH AT A TIME
WITH ONE LANE CLOSURE FOR
SIDE LANCES AND TWO LANE
CLOSURE FOR CENTER LANE AREA
LEGEND:

1. WORK ZONE

2. CONSTRUCTION SIGN

3. CONSTRUCTION SIGN

4. CONSTRUCTION SIGN

5. CONSTRUCTION SIGN

EXISTING SIGN

1. STOP

2. DO NOT ENTER

3. SP-383 (INN)

4. TEMPORARY CONCRETE BARRIER

5. DRUMS (1m MAX. SPACING)

6. R3-1C

7. R3-2C

8. SR-292 (INN)

MPT - STAGE I

END OF SHEET
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>TEXT</th>
<th>LETTER</th>
<th>APPROX. SIZE OF SIGN</th>
<th>MULTI.C.D. NO.</th>
<th>COLOR</th>
<th>TYPE OF MOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>619.02M</td>
<td></td>
<td>SYMBOL</td>
<td>1200mm x 600mm</td>
<td>W1-6G</td>
<td>W</td>
<td>B</td>
</tr>
<tr>
<td>619.02M</td>
<td></td>
<td>SYMBOL</td>
<td>1200mm x 600mm</td>
<td>W1-6L</td>
<td>W</td>
<td>B</td>
</tr>
<tr>
<td>619.02M</td>
<td></td>
<td>ROWD WORK 1 MILE</td>
<td>175mm x 1200mm</td>
<td>W8-1D (MODIFIED)</td>
<td>0</td>
<td>B</td>
</tr>
<tr>
<td>619.02M</td>
<td></td>
<td>LEFT LANE (CLOSED) 1000 FT</td>
<td>150mm x 1200mm</td>
<td>W8-7D (MODIFIED)</td>
<td>0</td>
<td>B</td>
</tr>
<tr>
<td>619.02M</td>
<td></td>
<td>RIGHT LANE CLOSED 1000 FT</td>
<td>150mm x 1200mm</td>
<td>W8-80 (MODIFIED)</td>
<td>0</td>
<td>B</td>
</tr>
<tr>
<td>619.02M</td>
<td></td>
<td>SYMBOL</td>
<td>1200mm x 1200mm</td>
<td>W3-10E (MODIFIED)</td>
<td>0</td>
<td>B</td>
</tr>
<tr>
<td>619.02M</td>
<td></td>
<td>SYMBOL</td>
<td>1200mm x 1200mm</td>
<td>W5-9E (MODIFIED)</td>
<td>0</td>
<td>B</td>
</tr>
<tr>
<td>619.02M</td>
<td></td>
<td>M.P.</td>
<td>600mm x 600mm</td>
<td>R2-1-40 INYO</td>
<td>0</td>
<td>B</td>
</tr>
</tbody>
</table>

FOR NOTE AND LEGEND SEE DWG. MPT-13.
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>TEXT</th>
<th>LETTER</th>
<th>APPROX. SIZE OF SIGN</th>
<th>M.L.T.C.D. NO.</th>
<th>COLOR</th>
<th>TYPE OF MOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>619.02W</td>
<td>ROAD WORK AHEAD</td>
<td>D 175mm</td>
<td>1200mm x 1200mm</td>
<td>WB-10 (MODIFIED)</td>
<td>0 B</td>
<td>SEE NOTE</td>
</tr>
<tr>
<td>619.02W</td>
<td>NO SHOULDER</td>
<td>D 175mm</td>
<td>1200mm x 1200mm</td>
<td>W6-13D</td>
<td>0 B</td>
<td>SEE NOTE</td>
</tr>
<tr>
<td>619.02W</td>
<td>END ROAD WORK</td>
<td>C 150mm</td>
<td>1200mm x 600mm</td>
<td>G11-2D</td>
<td>0 B</td>
<td>SEE NOTE</td>
</tr>
<tr>
<td>619.02W</td>
<td>-</td>
<td>-</td>
<td>760mm x 760mm</td>
<td>R3-1C</td>
<td>W RED CIRCLE</td>
<td>BLACK ARROW</td>
</tr>
<tr>
<td>619.02W</td>
<td>-</td>
<td>-</td>
<td>760mm x 760mm</td>
<td>R3-2C</td>
<td>W RED CIRCLE</td>
<td>BLACK ARROW</td>
</tr>
<tr>
<td>619.02W</td>
<td>-</td>
<td>-</td>
<td>915mm x 915mm</td>
<td>WB-20C</td>
<td>0 B</td>
<td>SEE NOTE</td>
</tr>
<tr>
<td>619.02M</td>
<td>NO STANDING ANYTIME</td>
<td>C 100mm</td>
<td>460mm x 410mm</td>
<td>SP-383B</td>
<td>R W</td>
<td>SEE NOTE</td>
</tr>
<tr>
<td>619.02M</td>
<td>-</td>
<td>-</td>
<td>760mm x 915mm</td>
<td>SR-932</td>
<td>0 B</td>
<td>SEE NOTE</td>
</tr>
</tbody>
</table>

**LEGEND**

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>WHITE</td>
</tr>
<tr>
<td>B</td>
<td>BLACK</td>
</tr>
<tr>
<td>R</td>
<td>RED</td>
</tr>
<tr>
<td>D</td>
<td>ORANGE</td>
</tr>
<tr>
<td>EL</td>
<td>BLUE</td>
</tr>
<tr>
<td>R</td>
<td>YELLOW</td>
</tr>
</tbody>
</table>

**NOTE:** The temporary signs shall be mounted on light poles or sign posts at the approximate locations shown on the drawings. No details for mounting the signs are given. It will be the contractor's responsibility to attach the signs at the locations in a manner acceptable to the engineer.
LEGEND

W  Web Repair Required Within Limits Shown

TF  Top Flange Repair Required Within Limits Shown

NOTE

FOR GENERAL NOTES, SEE DWGS. 3 TO 7.
**LEGEND**

**TL**  Top Lateral Replacement Within Limits Shown

**RR**  Rivet Replacement

**NOTE**

FOR GENERAL NOTES, SEE DWGS. 3 TO 7.
Replace 8 missing bolts, See Note A

LEGEND

BW

Repair of Broken Welded Connection Between Cross Beam and Stringer

NOTE

FOR GENERAL NOTES, SEE DWGS. 3 TO 7.

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
SPAN 85
SCALE: NTS

48.46 m
(MEASURED ON CL BRIDGE)

CL EAST TRUSS

CL WEST TRUSS

P114  P116

EXIST PROTECTIVE NETTING TO BE REMOVED AND REINSTALLED (TYP.)
ITEM 11624.199901M

Replace 4 loose balls,
See Note A

NOTE
FOR GENERAL NOTES,
SEE DWGS. 3 TO 7.

LEGEND

CP  Connection Plate Replacement

TL  Top Lateral Replacement Within Limits Shown

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
SPAN 85

IRELAND KAWAIH ELEMENTARY SCHOOL, JR. / KSU W. FINLEY, P.E. / NEW YORK, NEW YORK
SPAN 86
SCALE: NT 1:5

48.46 m
(MEASURED ON CL BRIDGE)

LEGEND

BW  Repair of Broken Welded Connection Between Cross Beam and Stringer
CP  Connection Plate Replacement
PR  Catwalk Platform Replacement

NOTE

EXIST, PROTECTIVE NETTINGS TO BE REMOVED AND REINSTALLED (TYP.)
ITEM 11634.199001M

FOR GENERAL NOTES, SEE DWGS. 3 TO 7.
SPAN 87
SCALE: HTS

65.91 m
(MEASURED ON CL BRIDGE)

0.69 m

TF
SEE DET. 4 ON DWG. 38

LEGEND

TF
Top Flange Repair Required Within Limits Shown

NOTE
FOR GENERAL NOTES, SEE DWGS. 3 TO 7.
LEGEND

CC  Connection Reinforcement Between Cross Beams
MB  Missing Bolts To Be Replaced
CP  Connection Plate Replacement

NOTE
FOR GENERAL NOTES, SEE DWGS. 3 TO 7.

SPAN 89

CLEANING AND PAINTING OF THE
KOSCIUSZKO BRIDGE OVER NEWTOWN CREEK
KINGS AND QUEENS COUNTIES
PHI XNB0.03  RN1-07566-8
LEGEND

- **TF**: Top Flange Repair Required Within Limits Shown
- **TL**: Top Lateral Replacement
- **MB**: Missing Bolts To Be Replaced
- **CP**: Connection Plate Replacement

**SPAN 90**

**NOTE**

FOR GENERAL NOTES, SEE DWGS. 3 TO 7.
SPAN 92

Catwalk Platform Replacement
Repair of Broken Welded Connection Between Cross Beam and Stringer
Missing Bolts To Be Replaced
Connection Plate Replacement

NOTE
FOR GENERAL NOTES, SEE DWGS. 3 TO 7.

Framing Plan
State of New York
Department of Transportation

Ellyns Engineering Company, P.C.
W. F. Perry, P.E.
New York, New York
LEGEND

TF  Top Flange Repair Required Within Limits Shown
W  Web Repair Required Within Limits Shown

SPAN 93

NOTE
FOR GENERAL NOTES,
SEE DWGS. 3 TO 7.

FRAME PLAN
SPAN 93
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

HYLAND ATHANASIA WATERBURY, P.E. /
EWELL W. FAILEY, P.E.
NEW YORK, NEW YORK
TF  Top Flange Repair Required Within Limits Shown
TP  Tie Plate Connection Replacement

NOTE
FOR GENERAL NOTES, SEE DWGs. 3 TO 7.

LEGEND

48.46 m

SPAN 94
Note "A"

1. All bolts shall be properly tensioned (see specifications).
2. If any visible gap is observed between crossbeam and stringer or between any other elements to be bolted, the gap shall be filled with shim plate(s) as required.
3. Replacement bolt and shim plates will be paid for under item 564.10M.
*

*Measured Along West Face of Bridge

** Measured Along & Expressway.

CL Span

East Face of Bridge

Bridge Scupper (Typ.)

0.20 m W.I. Pipe (Typ.)

G14

G13

G12

G11

G10

G9

G8

G7

G6

G5

G4

G3

G2

G1

CL Span

CL Expressway

0.20 m W.I. Pipe (Typ.)

5 Eq. Spaces
Typ. Interm. Suffeners

G15

6 Equal Spaces, Cross Frames

37.01 m

SPAN 103
Scale: NTS

Along CL Pier

Along CL Pier

West Face of Bridge

6 Equal Spaces, Cross Frames

38.16 m

SPAN 102
Scale: NTS

NOTE

FOR GENERAL NOTES,
SEE DWGS. 3 TO 7.

FRAMING PLAN
SPAN 102 & 103

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

STANDARD DRAWING WATERMARK, P.C.

DWELL M. FINLEY, P.C.
NEW YORK, NEW YORK

DRIVING NO.
SCALE
DATE
REGION 11
RIVETS REPLACEMENT NOTES

1. RIVETS REPLACED TO PERMIT REMOVAL OF ANY OF THE CONNECTED PARTS (WHETHER CALLED FOR ON THE PLANS OR ORDERED BY THE ENGINEER) SHALL BE REMOVED AND PAID FOR UNDER THE ITEMS FOR REMOVAL OF EXISTING STEEL. HIGH STRENGTH BOLTS TO REPLACE SAME RIVETS SHALL BE INSTALLED AND PAID FOR UNDER THE ITEMS FOR STRUCTURAL STEEL REPLACEMENT.

2. DETERIORATED RIVETS NOT COVERED UNDER NOTE 1 ABOVE WILL BE INSPECTED BY THE ENGINEER, WHO WILL ORDER THAT SPECIFIC RIVETS BE REPLACED WITH HIGH STRENGTH BOLTS IN ACCORDANCE WITH THE FOLLOWING GUIDELINES.

3. RIVETS (CATEGORY B) WITH DIMENSION OF BOTH HEADS MEETING OR SURPASSING EACH OF THE MINIMUM REQUIREMENTS SHOWN FOR CONDITION B MAY BE LEFT IN PLACE SUBJECT TO CONDITIONS DESCRIBED IN NOTES 6 AND 7.

4. RIVETS (CATEGORY C) NOT MEETING THE REQUIREMENTS OF CONDITION B BUT HAVING DIMENSIONS WHICH MEET OR SURPASS AT BOTH HEADS EACH OF THE MINIMUM REQUIREMENTS SHOWN FOR CONDITION C MAY BE LEFT IN PLACE SUBJECT TO THE FOLLOWING CONDITIONS:
   A) THERE IS NOT PRYING ACTION FROM APPLIED STRESS OR CREVICE CORROSION (SEE NOTE 7) WHICH TENDS TO SEPARATE THE CONNECTED PARTS.
   B) RIVETS HEADS DO NOT HAVE ADDITIONAL LOSSES DESCRIBED IN NOTE 6.
   C) RIVETS MAY BE LEFT IN PLACE TO THE EXTENT THAT THEIR NUMBER DOES NOT EXCEED 20% OF CONNECTION RIVETS IN ANY ONE CONNECTION OR 50% OF STITCH RIVETS IN ANY ONE PORTION OF A MEMBER.
   D) WHERE THE ABOVE PERCENTAGES ARE EXCEEDED THE NUMBER OF RIVETS OVER THE PRESCRIBED PERCENTAGE SHALL BE REPLACED WITH HIGH STRENGTH BOLTS.
   E) WHEN SELECTING RIVETS FOR REPLACEMENT TO MEET THE ABOVE PERCENTAGE REQUIREMENTS, THE WORST RIVETS IN ANY GROUP OR CONNECTION SHALL BE SELECTED FOR REPLACEMENT.

5. RIVETS (CATEGORY D) NOT MEETING THE REQUIREMENTS OF CONDITION C AT EITHER HEAD SHALL BE REPL ACED.

6. REPLACEMENT WILL ALSO BE REQUIRED FOR ANY RIVET EXHIBITING ADDITIONAL LOSS IN THE FORM OF PITS OR GOUGES OF THE EDGE OF EITHER HEAD PROJECTING BEYOND THE SHANK WHERE SUCH LOSS REDUCES THE SECTION BELOW THE LIMITS SHOWN FOR CONDITION B.

RIVET REPLACEMENT CRITERIA

7. WHERE CREVICE OR INTERFACE CORROSION BETWEEN CONNECTED PARTS IS PRESENT THE RIVETS ADJACENT TO THAT AREA SHALL BE REPLACED AFTER CLEANING BETWEEN THE PARTS REGARDLESS OF THE CONDITION OF THE RIVETS.

8. RIVETS REPLACED IN ACCORDANCE WITH NOTES 2 THROUGH 7 WILL BE PAID FOR UNDER ITEM 584.05, REMOVAL OF RIVETS AND REPLACEMENT WITH HIGH STRENGTH BOLTS.

9. DIMENSIONS SHOWN ON THESE SKETCHES FOR CONDITIONS B AND C ARE MINIMUM REQUIREMENTS FOR BOTH DRIVEN AND MANUFACTURED HEADS. THE MINIMUM HEIGHT OF HEAD IS MEASURED TO THE CENTER OF THE RIVET. THE MINIMUM DIAMETER APPLIES TO THAT DIRECTION IN WHICH IT IS THE SMALLEST.
SECTION A-A

ELEVATION

DETAIL 1
WEB REPAIR
N.T.S.

REMOVE AND REPLACE P3, dm & dmm
ITEMS 564.10M & 585.01M

REPLACE CONNECTION PLATED ITEMS 564.10M & 585.01M

ST9-10c
2 PLATES
12.7x280x609
REPLACE CONNECTION PLATED ITEMS 564.10M & 585.01M

ST9-10b
24NB-MX48
SLOTTED HOLES

DRILL 24mm HOLES
ITEM 585.01M

DRILL A 20mm DIA. HOLE AT THE END OF CRACK IN THE WEB

SECTION B-B

DETAIL 2
SPAN 99 LATERAL BRACING
P3 & TL-3o REPLACEMENT
N.T.S.

NOTES:
1. SEE DMG. NO. 15 FOR LOCATION OF DETAIL 1.
2. SEE DMG. NO. 32 FOR LOCATION OF DETAIL 2.

STEEL REPAIR DETAILS -- 1

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
TEMPORARY SUPPORT SHALL BE PROVIDED PRIOR TO DISCONNECTING THE CONNECTION ANGLES.

SECTION X-X
TYP WEB REINFORCEMENT FOR ST B1-100 & 10D

NEW PL 15.3 x 532 x 966
ITEMS 564, 10A, 586, 10M & 589, 01W

EXIST. FASCIA STRINGER
SHIM AS NECESSARY
NEW W 150 x 24 x 381

NEW STR. TUBING 305 x 102 x 127 x 1.78
NEW MC 250 x 33 x 711

EXIST. FASCIA STRINGERS & SIDEWALK BRACKET

NOTE:
1. SEE DWS. NO. 16 FOR LOCATION OF DETAIL 3.
NOTE 'A'

1. OUTER LANE TRAFFIC SHALL BE CLOSED DURING REPLACEMENT OF BOLTS IN THIS AREA.

2. SIDEWALK BRACKET TO BE TEMPORARILY SUPPORTED, SEE DWG. 48 FOR SUGGESTED METHOD.


DETAIL 4
SIDEWALK BRACKET TOP FLANGE REINFORCEMENT N.I.C.
DETAIL 5
RIVET REPLACEMENT ON TOP FLANGE
OF FLOOR BEAM W3 BETWEEN STRINGERS
N.T.S.

DETAIL 6
REPLACEMENT OF CONNECTION PLATE
FOR TOP LATERAL AT SPAN 83 & 85
N.T.S.

NOTES:
1. SEE OMC. NO. 17 FOR LOCATION OF DETAIL 5.
2. SEE OMC. NO. 19 FOR LOCATIONS OF DETAIL 6.
DETAIL 7
REPAIR OF BROKEN WELDED CONNECTION BETWEEN CROSS BEAM AND STRINGER
N.T.S.

1. SEE DWG NO. 18 FOR LOCATION OF DETAIL 7
2. SEE DWG NO. 20 FOR LOCATION OF DETAIL 8.
DETAIL 9
CATWALK PLATFORM CHECKERED PLATE REPLACEMENT N.T.S.

DETAIL 10
REPAIR OF BROKEN WELDED CONNECTION N.T.S.

DETAIL 11
RIVET REPLACEMENT ON TOP FLANGE OF FLOOR BEAM BETWEEN STRINGERS N.T.S.

NOTES:
1. SEE DWG. NOS. 20 & 26 FOR LOCATIONS OF DETAIL 9.
2. SEE DWG. NO. 20 FOR LOCATION OF DETAIL 10.
3. SEE DWG. NO. 22 FOR LOCATION OF DETAIL 11.
EXIST. STIFF.
NEW L152x99x9.5 x128 LG.

ELEVATION
SPAN 88 CB16a
SPAN 92 CB9b
SPAN 99 CB12b

M22 A325M BOLTS IN 24mm
HOLES. BOLTS SHALL BE PROPERLY TENSIONED
(SEE SPECIFICATION)
ITEMS 564.10M & 586.10M

INSTALL 2-L-8
152x99x9.5x128
ITEMS 564.10M & 586.10M

PLAN
DETAIL 12
REPAIR OF BENT WELD AT LOWER END OF STIFFENER
N.T.S.

REMOVE & REPLACE
2-9.5mm THICK 15
ITEMS 564.10M & 586.10M

W21 A325 BOLTS
MATCHING THE EXISTING HOLES IN THE CROSS BEAM

NEW CROSS BEAM PLATES TO BE REPLACED

TABLE OF CROSS BEAM CONNECTION PLATES TO BE REPLACED

<table>
<thead>
<tr>
<th>SPAN</th>
<th>CROSS BEAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>31 a, b</td>
</tr>
<tr>
<td>89</td>
<td>5 a, b</td>
</tr>
<tr>
<td></td>
<td>15 a, b</td>
</tr>
<tr>
<td>90</td>
<td>4 a, b</td>
</tr>
<tr>
<td></td>
<td>8 a, b</td>
</tr>
<tr>
<td></td>
<td>12 a, b</td>
</tr>
<tr>
<td>91</td>
<td>37 a, b</td>
</tr>
<tr>
<td></td>
<td>8 a, b</td>
</tr>
<tr>
<td>92</td>
<td>8 a, b</td>
</tr>
</tbody>
</table>

# FOR CB 28a, b
ONLY 2 - BOLTS
NEED TO BE INSTALLED

DETAIL 14
NEW CONNECTION PLATES BETWEEN CROSS BEAMS
N.T.S.

NOTE:
IN SLOTTED HOLES USE BOLTS WITH TWO NUTS.
FIRST NUT SHALL BE FINGER TIGHT AND THE
SECOND NUT TIGHTEN AS REQUIRED.
**DETAIL 15**
MISSING BOLTS TO BE REPLACED
N.T.S.

**DETAIL 16**
REPAIR OF BROKEN WELDED CONNECTION
N.T.S.

* At the cracked weld locations, the connection plate shall be ground smooth and magnetic particle tested to locate any possible crack propagation. The engineer shall be notified of the test results.

**DETAIL 17**
MISSING BOLT REPLACEMENT BETWEEN TOP LATERAL BRACING AND FLOOR BEAM AT SPAN 90
N.T.S.

**DETAIL 18**
REPLACEMENT OF TIE PLATE BETWEEN FLOOR BEAM AND SIDEWALK BRACKET AT SPAN 91
N.T.S.

**NOTES:**
1. SEE DWG. NO. 23 FOR LOCATIONS OF DETAILS 15 & 16.
2. SEE DWG. NO. 24 FOR LOCATION OF DETAIL 17.
3. SEE DWG. NO. 25 FOR LOCATION OF DETAIL 18.
**DETAIL 19**
TIE PLATE REPLACEMENT (PIER 93 VERTICAL POST)
N.T.S.

- REMOVE AND REPLACE TIE PLATE 1-PL 412x9.5x44T
- ITEMS 564.10M & 589.01M

- M22 A325M BOLTS (TYP.)

**DETAIL 20**
WEB REPAIR (ST. 98-8A)
N.T.S.

- EXISTING ST 98-8A
- INSTALL 1-PL 125x127x44T
- ITEMS 564.10M & 586.10M
- M22 A325M BOLT
- REMOVE 2-RIVETS AND REPLACE WITH M22 A325M BOLTS
- ITEM 586.05M

**DETAIL 21**
WEB REPAIR AND MISSING BOLTS TO BE REPLACED
N.T.S.

- M22 A325M BOLTS (TYP.)

**DETAIL 22**
TOP LATERAL PLATE REPLACEMENT
(SFB 3 AT SPAN 91)
N.T.S.

**NOTES:**
1. SEE DMG. NO. 28 FOR LOCATION OF DETAIL 19.
2. SEE DMG. NO. 31 FOR LOCATION OF DETAIL 20.
3. SEE DMG. NOS. 31 & 32 FOR LOCATION OF DETAIL 21.
4. SEE DMG. NO. 25 FOR LOCATION OF DETAIL 22.
**NOTES:**

1. SEE DWG. NO. 32 FOR LOCATION OF DETAIL 23.
2. SEE DWG. NO. 34 FOR LOCATION OF DETAIL 24.

**DETAIL 23**

TOP LATERAL BRACING REPLACEMENT

**DETAIL 24**

BOTTOM LATERAL TOP ANGLE REPLACEMENT
PLAN

DETAIL 27
TOP FLANGE STRINGER REINFORCEMENT
N.T.S.

1. M22 A325M TYPE 1 BOLT IN 24mm Ø FIELD DRILLED HOLE
2. M22 A325M TYPE 1 BOLT IN EXISTING BOLT HOLE

ELEVATION

DETAIL 28
INSTALL M22 A325M TYPE 1 BOLTS. BOLTS SHALL BE PROPERLY TENSIONED (SEE SPECIFICATION ITEM 564.10W)

NOTES:
1. SEE DWG. NO. 31 FOR LOCATION OF DETAIL 27
2. SEE DWG. NO. 23 FOR LOCATION OF DETAIL 28

STRIKING MEASUREMENTS:
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

STRIKING MEASUREMENTS:
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

PLAN

SECTION A-A
Suggested Temporary Support for Top Flange Repair and Tie Plate Replacement

Detail 1

Cl Truss and Vertical

Detail 2

Cl Vertical

Detail 3

Sidewalk

Notes:

1. The details on this drawing show a suggested method of temporary support during tie plate replacement or top flange repair operations. The contractor may propose for approval an alternate method.

2. Temporary support shall be in place prior to replacing the tie plates or installing top flange repair plates and shall be removed after the tie plate replacement or top flange repair plates installation has been completed.

3. The column shall be preloaded with 18 kip load by jacking with jacks having 50 ton capacity. The preloading shall be maintained by jacking during the entire replacement operation.

4. The outer lane traffic above the tie plate shall be replaced shall be closed during entire operation.

5. Details shown on this drawing are based on available existing shop drawings. Before fabrication of temporary support, the contractor shall verify all dimensions.

6. Details shown are based on using A36 steel.

7. All bolts shown are #32 type 1 bolts in 24 O.D. holes.

8. Mark the details on this drawing with tables of bolts on view no. 49.

9. The cost of temporary support system will not be paid separately, but shall be distributed among the prices for the various steel items.

Detail A-A

Section D-D

Section C-C

Section B-B

For bolt alignment and spacing, see Table B on Dwg. No. 49.

Pl 16.66 x 737 T and B. See Sect. C-C
TABLE A - SUPPORTS AT VERTICALS

<table>
<thead>
<tr>
<th>TYPE OF SUPPORT</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>I</td>
<td>57</td>
</tr>
<tr>
<td>II</td>
<td>57</td>
</tr>
<tr>
<td>III</td>
<td>57</td>
</tr>
<tr>
<td>IV</td>
<td>57</td>
</tr>
</tbody>
</table>

TABLE B - SUPPORTS AT VERTICALS

<table>
<thead>
<tr>
<th>OLD MARK OF VERTICAL</th>
<th>NEW SPAN NO.</th>
<th>TYPE OF SUPPORT</th>
<th>ELEVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>L3U3</td>
<td>3E</td>
<td>96</td>
<td>I</td>
</tr>
<tr>
<td>L2U2</td>
<td>7E</td>
<td>94</td>
<td>II</td>
</tr>
<tr>
<td>L2U2</td>
<td>14E</td>
<td>87</td>
<td>III</td>
</tr>
<tr>
<td>L6U6</td>
<td>10E</td>
<td>91</td>
<td>IV</td>
</tr>
<tr>
<td>L3U3</td>
<td>11E</td>
<td>90</td>
<td>V</td>
</tr>
</tbody>
</table>

* REMOVE EXISTING RIVETS AND REPLACE WITH M22 TYPE I BOLTS IN EXISTING HOLES.

TABLE C - LOCATIONS OF TOP FLANGE REPAIR PLATES

<table>
<thead>
<tr>
<th>MARK OF SIDEWALK BRACKET</th>
<th>OLD MARK OF VERTICAL</th>
<th>OLD MARK OF VERTICAL</th>
<th>OLD MARK OF VERTICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>S802</td>
<td>4E</td>
<td>L3U3</td>
<td>19E</td>
</tr>
<tr>
<td>S802</td>
<td>3E</td>
<td>L2U2</td>
<td>L6U6</td>
</tr>
<tr>
<td>S890</td>
<td>7E</td>
<td>L3U6</td>
<td>11E</td>
</tr>
</tbody>
</table>

TABLE D - TRUSSES VERTICALS

<table>
<thead>
<tr>
<th>OLD MARK OF VERTICAL</th>
<th>SECTION</th>
<th>F N</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2U2</td>
<td>14E</td>
<td>2 - M6, 460 x 63.5</td>
</tr>
<tr>
<td>1 - WEB, 471 x 11</td>
<td>4 - 152 x 102 x 9.5</td>
<td></td>
</tr>
<tr>
<td>L6U6</td>
<td>10E, 11E</td>
<td>2 - Co, 380 x 50</td>
</tr>
<tr>
<td>1 - WEB, 381 x 11</td>
<td>4 - 152 x 102 x 9.5</td>
<td></td>
</tr>
<tr>
<td>L2U2</td>
<td>7E, 8E</td>
<td>2 - Co, 380 x 50</td>
</tr>
<tr>
<td>b TO b Co</td>
<td></td>
<td>381 410</td>
</tr>
<tr>
<td>L3U3</td>
<td>19E, 3E</td>
<td>2 - M6, 460 x 63.5</td>
</tr>
<tr>
<td>b TO b Co</td>
<td></td>
<td>457 492</td>
</tr>
<tr>
<td>L3U3</td>
<td>11E</td>
<td>2 - Co, 380 x 50</td>
</tr>
<tr>
<td>b TO b Co</td>
<td></td>
<td>381 410</td>
</tr>
</tbody>
</table>

NOTE:
1. WORK THE TABLES ON THIS DRAWING WITH THE DETAILS ON DEC. NO. 48.
EXIST. M22 BOLTS TO BE REPLACED

REMOVE AND REPLACE 152x102x17.7x433 L1 ANGLE ITEMS 565.01A & 564.10W

EXIST. 19 FILL

EXIST. SPlice PLATES

ADD SHIM PLATES AS REQUIRED TO BE INCLUDED IN ITEM 564.10W

ELEVATION

EXIST. M22 BOLTS TO BE REPLACED

MISSING BOLTS TO BE REPLACED

SIDEWALK BRACKET 5899-7w

PLAN

DETAIL 29
DETAIL 30

SPAN 80 LATERAL BRACING
P2 AND TL-1C REPLACEMENT
N.Y.C.

REMOVE AND REPLACE TL-1C, dd, dd
AND dd ITEMS 585.01M & 584.10M.
LEGEND

AR  CONNECTION ANGLE REPLACEMENT
BR  BATTEN PLATE REPLACEMENT
CR  CONNECTION PLATE REINFORCEMENT
DR  DIAPHRAGM PLATE REPLACEMENT
LR  LACE BAR REPLACEMENT
RR  RIVET REPLACEMENT

Note:
Work this drawing with DWG No. T-2.
DETAIL 1
TB4 - F.S.
N.T.S.

REMOVE AND REPLACE ONE LACE BAR (63.5x4.7) ITEMS 589.01M AND 564.10M

DETAIL 2

TB41, LS25
3 @ 86.9

R.F.

SECTION A-A

REPLACE PLATE PC (610x11.1x762)
AND PO (610x11.1x767)
ITEMS 589.01M & 564.10M

DETAIL 3

ADD ONE PLATE 965x11x1080
REMOVE EXIST. RIVETS AND REPLACE
WITH M22 A325A BOLTS ITEMS
564.10M & 569.01M

EXIST. 2006x11x1080
PLATE P6

Pier 88 Repair Details - III
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

T.Y. LAND SAVANNAH WATERFRONT, Inc.
DEWITT W. INGLIS, P.C.
NEW YORK, NEW YORK

DIMENSION NO. SCALE DATE REGION
NOTE A:
ONE PLATE PA – 765X11,1X1,32m ON LS20, IN THE SOUTH CELL BETWEEN COLUMNS TCP & TCO, SHALL BE REMOVED AND REPLACED. THE REPLACEMENT PLATE MAY BE INSTALLED IN TWO HALF SECTIONS AND REASSEMBLED WITH FULL PENETRATION GROOVE WELD AFTER INSTALLATION. RADILOGRAPHIC TESTING OF THE WELDS IS REQUIRED. ALL WORK TO BE INCLUDED IN ITEMS 56.4.10M & 589.01M.

SECTION A-A

SECTION B-B
LS20, LS21

REMOVE AND REPLACE 2.44m LONG L152x102x12.7 (TYP. 2x1.520 & LS21) ITEMS 589.01M & 564.10M

REMOVE AND REPLACE 1.04m LONG L89x89x9.5 (TOP ANGLES ONLY, TYP. 2x1.520 & 2x1.521) ITEMS 589.01M & 564.10M

L89x89x9.5x0.56m L.G.
REMOVE BOLT BIVETS TO REPLACE WITH M22 A325M BOLTS ITEM 586.05 (TYP. ON EACH END)

Remove and replace bottom curve connection angles (L 152x102x12.7x17.53m Lg, R = 36.565) in both TB2 N.S. and TB2 F.S., Items 589.01M & 564.10M. Angles shall be removed and replaced one section at a time. Each section shall not exceed 1 meter in length.
REMOVE EXIST. CORRODED RIVETS AND REPLACE WITH H.S. BOLTS WITHIN LIMITS SHOWN ITEM 586.05W

TOP VIEW (W. HALF)

TB1-NS

REMOVE EXIST. CORRODED RIVETS AND REPLACE WITH H.S. BOLTS WITHIN LIMITS SHOWN ITEM 586.05W

TOP VIEW (E. HALF)

TB1-ES

DETAIL 21
DETAIL II
TBZ - N.S. & F.S.
N.T.S.

DETAIL 12
TB60 - N.S. & F.S.
N.T.S.

DETAIL 13
LS20 & LS21
N.T.S.

DETAIL 14
TB59 - F.S.
N.T.S.

DETAIL 15
LS8
N.T.S.

AX BETWEEN COLS. TC3 & TC9
AND TC5 & TC7 ONLY

NOTE:
FOR RIVET REPLACEMENT
CRITERIA, SEE DWG NO. 35

Pier 68 Repair Details - IX
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
NEW YORK, NEW YORK

EPLAND KAVANNAGH WATERBURY, P.E.
EMEKS W. FINKEL, P.E.
REMOVE EXIST. CORRODED RIVETS WITHIN LIMITS SHOWN AND REPLACE WITH M.S. 80.75 ITEM 506.05M

EAST FACE - TC5

SECTION A-A

SECTION B-B

DETAIL 20

NOTE:
FOR RIVET REPLACEMENT CRITERIA, SEE DWG NO. 35
CL PIER TOWER 88 (BROOKLYN TOWER)

91.46 m
(300' MAIN SPAN)
(Span 89)

70.12 m (230' SPAN)
(Span 88)

CL EAST TRUSS
(MAIN SPAN)

ST 12M
ST 11M
ST 10M
ST 9M
ST 8M
ST 7M
ST 6M
ST 5M
ST 4M
ST 3M
ST 2M
ST 1M

NOTE: ALL DIMENSIONS ARE GIVEN IN METERS UNLESS OTHERWISE SHOWN.

LOCATION PLAN
N.T.S.

FOR SECTIONS A-A, B-B, C-C, AND D-D, SEE FOLLOWING DRAWINGS.

DRAINAGE TROUGH LOCATION PLAN
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
SECTION B-B (MAIN SPAN)

N. T. S. -

10.36 m (34'-0'"") ROADWAY (MAIN SPAN)

TOP OF SPLASH PLATE
SLOPE DOWN 25 mm IN 3.049 m
(1" IN 10'-0'"")

EXISTING CONCRETE-FILLED GRID FLOORING

EXISTING CROSSBEAM

EXISTING STEFFENER PLATE (TYP.)

EXISTING STRINGER (TYP.)

0.30 m (1'-0'"")

10.49 m (34'-5'"")

10 mm THICK CLOSURE PLATE AT END OF SPLASH PLATE

10.95 m (37'-5'"")

END OF SPLASH PLATE.
SECTION C-C (SIDEWALK SECTION)

C.L. PIER TOWER 88 (AT BROOKLYN SIDE)

A = 75 mm (3"
B = 230 mm (9"
C = 254 mm (6"

TOP OF SIDEWALK (MAIN SPAN)

19 mm +/- (3/4" +/-) SHIM PLATE, (SEE NOTE 4)

TOP OF SAFETY WALK (APPROACH SPAN)

13 mm (1/2") TROUGH SUPPORT PLATE

EXISTING CROSSBEAM

SEE NOTE "A" (SEE NOTE 3 FOR MORE INFORMATION)

SEE NOTE "A"

EXISTING STRINGER

EXISTING STRINGER

EXISTING SIDEWALK BRACKET
(MAIN SPAN, SPAN 89)

125 mm (5"

C.L. OF DRAINAGE TROUGH

R=100 mm (4"

10 mm (3/8") TROUGH PLATE

SEE NOTE "A"

For NOTES, NOTE "A" and NOTE "B", see Drawing No. DT-5

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

ELSIE W. FINE, P.C.
NEW YORK,
NEW YORK

DEGREE No. DATE
DT-4 10/25/01

REGION 11

For NOTES, NOTE "A" and NOTE "B", see Drawing No. DT-5
EXISTING FINGER TYPE DECK EXPANSION JOINT AT BROOKLYN PIER TOWER (PIER TOWER 88)

- 10 mm THICK CLOSURE PLATE AT END OF SPLASH PLATE
- 13 mm (1/2") TROUGH SUPPORT PLATE
- SEE NOTE "A" (SEE NOTE 3 FOR MORE INFORMATION)
- EXISTING CONCRETE-FILLED GRID FLOORING
- 19 mm +/- (3/4" +/-) SHIM PLATE, (SEE NOTE 4)
- EXISTING 10 mm (3/8") DIAPHRAGM PLATE AT 560 mm (1'-10") C.C.
- EXISTING CROSSBEAM
- SEE NOTE "A"
- 10 mm (3/8") TROUGH PLATE
- C.L. OF DRAINAGE TROUGH
- C.L. END FLOORBEAM (MAIN SPAN, SPAN 89)
- C.L. END FLOORBEAM (APPROACH SPAN, SPAN 88)

SECTION D-D (ROADWAY SECTION)
N. T. S.

NOTE "A": Drill 16 mm (5/8") Dia. holes in existing diaphragms, Trough Support Plate, Shim Plate, Trough Plate, and/or Splash Plate, whichever applicable, and fasten with 13 mm (1/2") Dia. stainless steel bolts with self locking nuts and washers at 46 mm (1'-8") centers.

NOTE "B": Trough Support Plate and Trough Plate to be plumb below the point from the level at the top of existing stringers.

NOTES:

1. Unless otherwise noted, Structural Steel (including Trough Support Plates, Trough Plates, Splash Plates, Shim Plates) shall be ASTM A 36M and shall be Hot-Dipped Galvanized in accordance with ASTM A123M. Cost to be included in Item 564.10M, Structural Steel Replacement.
2. For Stainless Steel Connection Hardware, see Material Specifications 715-16, Stainless Steel Connecting Products, include cost in Item 564.10M, Structural Steel Replacement. Also see Note "A".
3. Drilling of holes into existing structural steel shall be included in Item 586.10M, Field Drill Holes in Existing Structural Steel.
4. Thickness of Shim Plates (where required) shall be modified and finalized by the field measurement to clear the Trough Support Plate from the existing stringers and shall be made continuous to prevent water getting between the Trough Support Plate and the web of the Cross Beam.
SPECIAL NOTES
SPECIAL NOTES

1. **Class A Containment and Painting Systems**

   Item 18570.1503M, Class A Containment System for Paint Removal, Item 18573.1015M-Field Cleaning and Overcoating-Total Removal (Spray Prohibited), and Item 571.01M, Treatment and Disposal of Paint Removal Waste, shall apply for the entire project. Under Item 18573.1015M, paint shall be applied by using brushes or rollers, except that for trusses, pier towers, and built-up bracing members, and those members in tight spaces inaccessible to brushes or rollers, paint application by spray method within a fully enclosed Class A containment will be allowed. In addition, painting of all steel members of all spans in Queens side (Spans 90 :through 103) shall be done within a containment structure.

   The total area of structural steel surfaces to be cleaned and painted has been estimated to be 211,210 square meters.

   For the purpose of coordination with NYCDOT regarding maintenance activities at this site, the Contractor shall notify Mr. Charles Remi, NYCDOT Bridge Maintenance at (718) 349-0452 a minimum of four (4) weeks prior to work beginning.

2. **Miscellaneous Structural Steel Repairs**

   See General Note 4 for information.

3. **Vacuuming Equipment**

   The Vacuuming Equipment specified in Item 18570.1503M to clean up waste materials from the surfaces of the containment enclosure shall utilize a Hepa filtering System. A Hepa filter shall be defined as a filter that is at least 99.97% efficient against particles that are 0.39μ in diameter.

4. **Containment System Clearance**

   The Contractor is advised that the abrasive blasting containment system shall be designed and installed to provide clearance from the work surfaces that is sufficient to allow blasting in an inward direction. Be advised that the containment system the Contractor must use shall be included in the unit price for item #18570.1503M “Class A Containment System for Paint Removal”. Tarp seams will not be allowed adjacent to columns or other surfaces that may allow for the release of debris if abrasive blasting is misdirected toward the containment tarps. The containment system design and installation shall provide clearance once inward movement of the tarps has occurred.
5. **Existing Vertical Clearance**

The Contractor shall not in any way reduce the existing vertical clearances on lanes other than those occupied for painting purposes.

6. **Public Protection**

The Contractor shall furnish such other safeguards as shall be deemed necessary by the Engineer to protect the public from damage or injury caused by his cleaning and painting operations.

The Contractor shall furnish and display warning signs inscribed "SAND BLASTING ZONE/WET PAINT" where directed, to warn the public. The size and text of these signs shall be as ordered by the Engineer.

The Contractor shall clean, at his own expense, to the satisfaction of the owner, any vehicle which becomes marred by his painting operation. Appropriate signs shall be posted by the Contractor at each painting site advising motorists of this cleaning service.

Pots, containers and receptacles while being used for painting must be made safe and secure in a manner that will prevent them from upsetting. On suspension of work, either at the end of the day or at other times when no work is being carried on, pots, containers, receptacles, etc. shall be removed from the structure.

7. **Precautions Against Fire**

The Contractor shall take adequate precautions to guard against fire, as ordered by the Engineer. He shall maintain at his storage shed, workman's quarters and elsewhere as ordered at each location, a fire extinguisher of the soda-acid type or approved equal, of not less that 9.5 liters capacity, fully charged at all times. Cost incurred for the item, Precautions Against Fire, shall be included in the price bid for the various items of the contract, and no separate payment shall be made.

8. **Quality Delays**

The Contractor expressly covenants and agrees that in undertaking to complete the work within the time specified, he has taken into consideration and made allowances for all of the ordinary delays and hindrances incident to such work whether growing out of the weather or out of delays in securing materials, or workmen, or resulting from maintenance of traffic and conditions at the site or otherwise. The Contractor will not be compensated with additional money or extension of construction time as a result of the Contractor's breach of his covenant.
9. **Existing Traffic Signs**

The Contractor is cautioned that care shall be taken to protect existing signs from falling paint. Signs that are so defaced will require replacement with new signs at the expense of the Contractor.

10. **Existing Chain Link Fencing**

The Contractor is cautioned that care shall be taken to protect safety chain link fencing on the structure premise from paint. Any fencing so defaced shall be cleaned to the satisfaction of the Engineer, at no cost to the State.

11. **Utilities**

Prior to the commencement of construction, the Contractor shall ascertain the exact locations of all utility lines (including but not limited to electric lines) within the construction areas and shall instruct his personnel concerning these and shall take all appropriate safety steps to see that these lines are secured from contact or physical damage during his operations.

The Contractor will be required to give the various owning utility companies or agencies at least 48 hours notice before doing any work which may interfere with the operation of such utilities. In the event the Contractor damages an existing utility service causing an interruption in said service, the Contractor shall immediately arrange for service to be restored and may not continue his work operation until service is restored unless directed by the Engineer. If any utilities are damaged and the necessary repairs are not immediately made by the Contractor, the work may be done by the respective owning companies or agencies and the cost thereof charged against the Contractor. The costs associated with the restoration of service shall be at the Contractor's expense unless otherwise directed by the Engineer. The cost of all work connected with maintaining and protecting of utilities affected by the work of the contract shall be borne by the Contractor, and included in the price bid for the various items in the contract.

12. **Notification of Fire and Police Authorities**

The Fire and Police Authorities shall be notified in writing of the beginning of construction and the proposed schedule of operation and shall be kept appraised of progress of the work in order to coordinate and maintain Fire and Police protection.

The Contractor shall file with the affected Fire and Police agencies a list of names, addresses, and telephone numbers of the principals or their authorized representatives who can be contacted at any time in an emergency and outside of normal contract working hours to secure and use labor, material and equipment for emergency repairs to make safe the entire area of the contract.
13. **Schedule of Operation**

At least 10 days before starting work, the Contractor shall submit a schedule of operations to the Engineer, showing the location and dates of starting, grouping of workers, and completion of the various items and sections of work.

The Contractor shall be required to submit bi-weekly, a two-week projected bar chart showing the proposed schedule of work at specific locations.

Should the Contractor, at any time during the progress of work, deem it necessary to change the schedule, he must first submit same for approval of the Engineer.

The Contractor shall consider working shifts and/or weekends to foster expeditious completion of the project.

The Contractor shall also schedule the work for the thru-truss and railings to be performed and completed during the first stage of the Contract.

14. **Responsibility of Contractor for Plant and Methods and Liability to the Public**

Equipment, scaffolding, containment, appliance, and procedures shall be such as will secure a satisfactory quality of work, safe and adequate means of inspection, performance of cleaning and painting and miscellaneous structural steel repair work, and a rate of progress, which, in the opinion of the Engineer, will insure completion within the time specified. The Contractor alone will be responsible for the safety and adequacy of his equipment, scaffolding, containment, appliances and methods as per the requirements of OSHA, NYSDEC and NYSDOL. The Contractor shall be the sole party liable for the injuries of person(s) and/or the damage of vehicles, equipment, trains, or vessels, travelling under or above the structure if the said injuries of person(s) and/or damage of vehicles, equipment, trains, or vessels, occur as a result of the Contractor's execution of work not meeting the adequacy and the safety requirements listed above.

15. **Definition of Terms**

A. Whenever the term Regional Director appears in the Contract Plans, Proposal or Specifications, it shall be understood to mean, Regional Director, Region 11.

B. Whenever the term Regional Office appears in the Contractor Plans, Proposal or Specification it shall be understood to mean, New York State Department of Transportation, Region 11.
16. **Inspection**

Any work deemed to be defective by the Engineer shall be reblasted to remove the paint and repainted at the Contractor's own cost to the satisfaction of the Engineer. Scaffolds or other appurtenances used for painting shall be left in place until inspection has been accomplished and removal of same authorized by the Engineer.

17. **Surface to be Painted**

In addition to all structural steel (including bearings), painting of railings, curbs, fascias, downspouts and miscellaneous items including the utility pipes which have been previously painted is required under the painting items.

18. **Bearings**

In addition to the work of cleaning and painting as outlined above, the Contractor shall be required to clean and paint all bearings. The Contractor shall perform required clearing and grubbing at areas around the bearings from bird deposits and debris. Payment shall be included in Item 18573.1015M (Spray Prohibited), no separate payment shall be made.

19. **Storage Areas**

The Contractor may store the paint waste material in sealed containers at storage site(s), and Suggested Contractors Staging/Storage Area(s), or at other storage site(s) after the Contractor has obtained the approval of the Engineer in Charge and NYCDOT before the start of work.

A. Clean-up and restoration of all staging and storage area(s) to their original condition shall be included in the price bid for Item 201.06M, Cleaning and Grubbing. The Contractor shall erect temporary chain link fencing to the satisfaction of the Engineer around all storage and staging area(s). Pedestrian access adjacent to these area(s), if previously existing, must be maintained (1.5 meter min. width) at all times. All costs for the temporary chain link fencing shall be included in Item 699.040001M.

Setup and restoration of the Staging Area shall be as directed by the Engineer. Restoration shall include the regrading of any areas which were compacted by the Contractor’s vehicles, equipment, and/or materials. All restoration details shall be submitted to the Engineer for approval before commencing actual restoration.

B. To ensure a safe traffic flow at all time, storage of materials and equipment shall not be permitted to be placed on the top of the structure or within the traveled way of the highway. Storage area(s) shall be separated from the traveled way by a clear space of 9 meter minimum width, unless such storage is placed behind concrete barrier.

Page 5 of 26
20. **Collection and Storage of Paint Waste**

The Contractor is responsible for the collection and storage of abrasive blasting debris. This operation must be expedited in a manner that will prevent the releases of abrasive blasting debris into the environment. The Contractor shall transport the abrasive blasting debris outside the functioning containment system in steel drums with secured steel lids. The Contractor shall store the abrasive blasting debris at a designated storage site only in steel drums with secured steel lids. Storage sites shall be secured with fencing and appropriately signed to prevent unauthorized access to the abrasive blasting debris.

21. **Protection and Restoration of ROW Areas in the Vicinity of Storage and Staging Area(s)**

- The storage/staging area plan shall specify entrance and exit routes through the landscape as well as areas required by the Contractor for work and prohibit access to all remaining ROW locations.

- All trees, if any, within 60 meter of storage and staging area(s) shall be protected with construction fencing around the drip line (outermost limits of branches).

- Contractors, equipment, supplies or vehicles shall not be parked or driven within the drip line at any time at any location on the ROW. Driving and storing on open lawn are also prohibited.

- The storage and staging area(s) shall be restored as specified in section 107-11 "Restoration of Disturbed Areas Within The Right of Way". The installation of topsoil for soil/turf restoration and all establishment tasks for trees and turf shall be done as directed by the Engineer.

22. **Legal Loads**

These requirements supplement those in Section 104-05 and 105-12 of the Standard Specifications. They 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 or structure to be retained in the completed work. The Special Note 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 their bid prices the costs of operating all affected hauling units and equipment within the legal load limitations, including the costs of operating presently owned equipment at less than full vehicle capacity as well as the costs involved in mobilizing, leasing or purchasing new equipment.
For operations solely within the project limits, there shall be no waivers of legal load limitations for construction or hauling equipment or trucks, whether owned or operated by the Contractor, a subcontractor, or a supplier, or any new or existing course of pavement or structure to be retained in the finished work, unless otherwise authorized in writing by the Deputy Chief Engineer for Construction.

Any materials delivered to the project site in hauling units must not exceed the legal weight limits, except as authorized by permit. Failure to provide advance documentation of legal payload limits may be considered by the Engineer as prima facie evidence that the legal load limitations are exceeded and the material may be promptly rejected solely on such basis. The Contractor shall have no claim for reimbursement for such materials or for any other costs if subsequent weight indicated the load to be within legal limitation.

23. Permits, Laws and Notices

A. The Contractor shall, at his 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 Contract, all of which shall be performed or furnished by the Contractor, without additional cost to the State.

B. Agencies with which the Contractor may be directly or indirectly involved for permits, permissions, notifications and coordination include the following:

1. New York City Department of Transportation:
   a. Bureau of Traffic Operations
      28-11 Queens Borough Plaza North
      Long Island City, New York 11101
      Attention: Mr. Jay Jaber
      Chief - Division of Highway Design Channelization
      Tel. No.: (718) 433-3160

   b. Bureau of Traffic
      120-55 Queens Boulevard, Room 259
      Kew Garden, New York 11424
      Attention: Mr. Charles Chin
      Queens Borough Engineer
      Tel. No.: (718) 286-2616
c. Division of Bridges
   Bureau of Roadway Bridges
   2 Rector Street, 5th Floor
   New York, New York 10006
   Attention: Mr. Larry King, P.E.
   Deputy Chief Engineer
   Tel. No.: (212) 788-1890

d. The Office of Construction Mitigation & Coordination
   40 Worth Street
   New York, New York 10013
   Attention: Mr. William Hirsch
   Assistant Commissioner
   Tel. No.: (212) 442-9839

e. Arterial Maintenance
   40 Worth Street, 10th Floor
   New York, New York 10013
   Attention: Ms. Margaret Forgione
   Director
   Tel. No.: (212) 788-1721

f. Landscape Improvement and Beautification
   2 Rector Street
   New York, New York 10006
   Attention: Mr. Kim Mulcahy
   Director
   Tel. No.: (212) 788-2081

2. Borough Presidents and Consulting Engineers:

e. Queens Borough President's Office
   The City of New York
   120-55 Queens Boulevard
   Kew Gardens, New York 11424
   Attention: Mr. Michael Sinansky, P.E.
   Consulting Engineer
   Office of Borough President
   Tel. No.: (718) 286-2828
b. Kings Borough President's Office
Brooklyn Borough Engineering
50 21st Street,
Brooklyn, N.Y. 11232
Attention: Mr. Joseph Palmieri
Deputy Borough Engineer
Tel. No.: (718) 965-3539

3. New York City

a. Police Department
One Police Plaza
New York, New York 10038
Attention: Mr. Howard A. Baker
Deputy Commissioner
Tel. No.: (212) 374-4213

b. Fire Department
NYC Fire Communication
9 Metrotech Center
Brooklyn, New York 11201
Attention: Mr. Stephen M. Gregory
Assistant Commissioner
Tel. No.: (718) 999-1715

4. Community Boards

a. Queens County:

Board No. 2
43-22, 50th Street
Woodside, N.Y. 11377
Attention: Ms. Dolores Rizzotto
District Manager
Tel. No. (718) 533-8773

b. Kings County:

Board No. 1
435 Graham Ave.
Brooklyn, N.Y. 11211
Attention: Mr. Gerald Esposito
District Manager
Tel. No. (718) 389-0009
5. New York State Department of Transportation

NYSDOT-Region 11
Hunters Point Plaza
47-40 21st Street
Long Island City, New York 11101
Attention: Mr. Albert Jablonsky, P.E.
Regional Design Engineer
Tel. No.: (718) 482-4631

6. Other Agencies

Coordinate miscellaneous structural steel repairs, cleaning and painting operations with:

a. Engineering Department
   Long Island Railroad
   Jamaica Station
   Jamaica, New York 11435
   Attention: Mr. Dennis George
   Chief Engineer
   Tel. No.: (718) 558-3545

b. Brooklyn Union Gas Company
   General & Executive Offices
   1 Metro Tech Center
   Brooklyn, New York 11201
   Tel. No.: (718) 403-2000

c. New York State Department of Environmental Conservation
   50 Wolf Road
   Albany, New York 12233
   Attention: Mr. Gavin Donohue
   Regional Affairs
   Tel. No.: (518) 457-5696

d. New York City Department of Environmental Protection
   59-17 Junction Boulevard
   Queens, N. Y. 11368
   Attention: Mr. Joel Miele
   Commissioner
   Tel. No.: (718) 595-6665
24. Protecting Workers from Lead and Materials Containing Lead (Paint)

By issuance of this Special Note, Contractors are alerted to the fact that the paint coating on the structures in this project contains lead. Lead is a toxic metal capable of causing damage to the nervous system, kidneys, bones, heart, and reproductive system.

The Contractor is alerted to OSHA requirements for worker lead protection included in 29 CFR 1926.62. Additional OSHA requirements including Hazard Communication (29 CFR 1926.59), Safety Training (29 CFT 1926.21), and other OSHA standards must also be met as applicable. A written lead compliance program is a required component of the Project Health and Safety Plan listed in Section 107-05, Subsection A, of the Standard Specifications.

The Contractor shall provide to the Engineer a written lead compliance program in full compliance with all aspects of OSHA CFT 1926.62. As a minimum, it shall address the specific issues listed in paragraph (e) (2) of 1926.62. In addition, it shall provide detailed information describing the training and experience of the competent person who will supervise the compliance program on site. A description of procedures to monitor worker exposures to lead and the proposed medical monitoring program shall be provided. If respirators are to be used to protect workers from lead exposure, a written respirator program shall be provided. In addition, the contractor's written Hazard Communication program and worker lead training program shall be included.

Specific operations that would likely result in worker exposure to lead include, but are not limited to, the following:

- Removal of lead based paint coatings by abrasive blasting or other procedures.
- Cleanup and removal of paint debris.
- Cleanup, relocation, and dismantling of paint removal containment structures.
- Flame cutting, heating or welding of steel coated with lead-based paint.
- Removal of bolts or rivets coated with lead-based paint.
- Any other operations that may dislodge existing coatings of lead-based paint, or subject them to abrasion or elevated temperatures.

Contractors are specifically alerted to the requirements of CFR 1926.62 relating to the implementation of engineering and work practice controls. Contractors shall be required to identify and implement feasible controls to reduce worker exposure to lead to a level at or below the Permissible Exposure Level stated in CFR 1926.62. The use of respirators and protective clothing as described in 1926.62 shall be used to supplement engineering and work practice controls, if necessary, to protect workers from exposures above the Permissible Exposure Level. Sole reliance on respirators or protective clothing to protect workers from exposures above the Permissible Exposure Level, without first implementing feasible engineering and work practice controls, shall not be permitted except for initial assessment of structural steel prior to heating, welding, or flame cutting to reduce worker exposure below the Permissible Exposure Level. In cases where the Contractor can clearly
demonstrate through exposure monitoring that other work practices and engineering controls, under the oversight of a certified industrial hygienist, can effectively maintain actual worker exposure below the permissible exposure level, exceptions to this requirements may be granted by the Engineer.

The Contractor shall provide to the Engineer upon request copies of documentation to demonstrate full compliance with CFR 1926.62. These records shall include the written compliance plan and associated training and exposure and medical monitoring, and other such records as are necessary to document compliance with the standard.

The Contractor is referred to the following publications for additional information:

OSHA - 3142 - Lead in Construction
OSHA - Fact Sheet 93-47 - Worker Protection Programs
OSHA - Fact Sheet 93-48 - Engineering Controls
OSHA - Fact Sheet 93-49 - Housekeeping and Personal Hygiene Practices
OSHA - Fact Sheet 93-50 - Protective Clothing
OSHA - Fact Sheet 93-51 - Respiratory Protection
OSHA - Fact Sheet 93-52 - Medical Surveillance

25. **Lead Hazard Signs**

The Contractor shall provide lead hazard signs around the containment to alert the general public to the nature of the work. The signs shall be at least 7" x 10" and the text shall be in both English and Spanish. The text shall read "CAUTION: POISON LEAD HAZARD AREA. DO NOT ENTER WORK AREA UNLESS AUTHORIZED. RESPIRATORS AND PROTECTIVE CLOTHING REQUIRED. NO EATING, DRINKING, OR SMOKING PERMITTED". No separate payment shall be made for the signs. The cost shall be included in the bid price for item #18570.1503M "Class A Containment System for Paint Removal".

26. **Cleaning Structural Steel on Existing Bridges**

Span No. 79 through Span No. 103 (including Pier Towers 88 and 89) in Bridge Bin No. 1-07569-9.

100 percent of the structural steel in the bridge will require commercial blast cleaning in accordance with Item 18573.1015M (Spray Prohibited) of the Standard Specifications (refer to Special Note 1 herein for additional information). Therefore, bidders should inspect the bridge carefully prior to submitting bids.
27. **Painting Galvanized Surfaces**

Galvanized railing, if any, with heavy loss of galvanization and/or with rust, shall be painted in accordance with the following:

1. Paint shall be one of the products on the Department’s Approved List titled "Paints for Structural Steel, C. Finish Paint and Thinners", Acceptance shall be based on the appearance of the paint on the Approved List.

2. All galvanized surfaces shall be cleaned in the manner required by SSPC-SP1, Solvent Cleaning. Payment for this work shall be included under Item 18573.1015M.

3. Abrade all galvanized surfaces by brush blast methods, or other mechanical means approved by the Engineer/Inspector. The purpose of abrading is to roughen the surface, not to remove material. Payment for this work shall be included under Item 18573.1015M (Spray Prohibited).

4. Apply the paint in accordance with the manufacturer's instructions to a minimum dry film thickness of 4.0 mils for intermediate coats and 0.3 mils for finish coat. Manufacturer’s instructions for mixing and paint application shall be supplied to the Engineer/Inspector at least one week prior to the beginning of any painting work. Payment for this work shall be included under Items 18573.1015M (Spray Prohibited).

5. The color of the finish coat paint shall be the following code based on Federal Standard 595B Colors (July 1994):

   All Spans :17773

6. Paint application methods shall be in accordance with the following:

   a. Shop: Spray, roller or brush.
   b. Field: Brush only.

28. **Shielding Operations**

   a. Upon award of the contract, the Contractor shall submit a schedule of work, on a span by span basis (including Pier Tower 88 at the Brooklyn side and Pier Tower 89 at the Queens side), as required in the contract. Thereafter, the Department will provide the Contractor with a tentative schedule for the inspection of the bridge spans (including the said pier towers), by others. The Department will, to the best of its ability, coordinate its schedule of inspection and other activities with the Contractor’s schedule.
b. On the scheduled date(s) of inspection, the Contractor shall be available for removing the protective shielding, if any, to allow the Engineer to inspect the structural steel underside of the bridge deck. A one person bucket truck capable of reaching the underside of the deck or other equipment approved by the Engineer shall be provided by the Contractor for this inspection. Any lane closures or other Maintenance and Protection of Traffic (MPT) facilities must be maintained by the Contractor in a manner acceptable to the Engineer. Payment for such M&PT shall be included under Item 619.01M.

c. Subsequent to inspection, the Department may determine that emergency repairs, other than the miscellaneous structural steel repairs indicated herein, are required before cleaning and painting operations can begin on that area, under this contract. Any such repairs will be performed by others but may require coordination with and possible modification of the Contractor's operations.

d. Any shielding removed for the performance of cleaning and painting or miscellaneous structural steel repair operations shall be replaced, as necessary, in accordance with the directives of the Engineer and in a manner acceptable to the Engineer. However, in areas that do not impact vehicular or pedestrian traffic, or the operation of permit tenants, the Contractor at his option, and with the concurrence of the Engineer, may protect the hazard zone in accordance with subsection 107-05E, Guarding and Protection.

e. Any existing protective shielding shall be replaced to its original condition upon completion of the contract work.

29. **Homeless People**

Wherever the Contractor encounters homeless people and their possessions, the Contractor shall contact in writing the appropriate NYC agencies (including NYC Police Department, NYC Homeless Services Department, and NYC Sanitation Department) and cc the letter to the EIC. The letter shall inform the NYC Agencies in a timely manner of the Contractor's work which may affect the homeless and request that the NYC Agencies relocate the homeless so that the Contractor's work will not be interfered with.

30. **Pigeon Droppings, Dirt, and Debris**

Clearing and grubbing of pigeon droppings and debris will be required, especially from spaces inside the members of the steel towers (piers) of Spans 88 and 89, prior to cleaning and painting operations. The cost for this work shall be included in the Contractor's bid price of Item 18573.1015M (refer to Special Note 1 for additional information). The Contractor is cautioned that personnel engaged in the clean-up of pigeon droppings may be subjected to a potential health hazard, unless reasonable precautions are observed. Refer to NYS Bulletin No. SB-94-4, "Procedures For Avoiding Exposure to Pigeon Droppings" for the procedure
that must be followed when removing droppings.

31. **Contractor Supplied Design Calculations**

All design calculations, if specifically required by the Contract Documents, shall be submitted to the Engineer and shall be performed by a Professional Engineer licensed to practice in the State of New York. The Professional Engineer shall be retained and paid by the Contractor.

32. **Disposal of Construction Waste**

   A. The Contractor shall dispose of all waste materials in a legal and proper manner.

   B. Should the facilities of the New York City Department of Sanitation be used, waste material shall be disposed of in accordance with the rules and regulations of the Department of Sanitation. The Contractor shall submit an affidavit to the Commissioner indicating that he has complied with said rules and regulations, the site used, and proof of purchase of dump tickets.

   C. Should the Contractor use a site other than a Department of Sanitation facility, the Contractor shall submit an affidavit to the Commissioner indicating that he has complied with all laws for removal of waste material, the site used, and a paid receipt.

   D. Failure to comply with this provision shall be deemed a material breach of this agreement.

33. **Highlighting Proposed Contract Changes on Shop Drawings**

For those items which require the Contractor to submit shop or working drawings, the Contractor shall indicate on such drawings, by circling, annotating, or otherwise highlighting, those details which propose a change from what is required in the contract plans and specifications. Shop drawings and/or working drawings found to have changes which are not highlighted will not be accepted and will be returned to the Contractor without review; a new submittal will be required.

34. **Microcomputer System**

Under Item 15637.35M, the Contractor shall supply one Microcomputer System work station which includes a project software package capable of fulfilling the scheduling required outlined in the contract documents. The proposed software package shall be submitted to the Engineer for approval prior to purchase/installation.
35. **Radio System**

For Item 15634.0498 and Item 15634.0499, the Contractor shall supply and maintain a base station and radios with all accessories meeting the following specification:

**900 MHZ Trunked Radio System**

1. One (1) Control (Base) Station for 900 MHZ Trucked Radio System with:
   - Desk Top Microphone
   - A/C Power Supply
   - Antenna
   - Cable and hardware

2. Portable Radios for 900 MHZ Trucked Radio System with:
   - Batteries
   - Antennas
   - Carrying cases
   - Belt-clips
   - Battery charger for each radio

3. Repeater rental

   The following Station and Radio are acceptable

   GE TMX 9315  
   E.J. Johnson 8644  
   Motorola Spectra 900  

   GE MTL PG 901  
   E.J. Johnson 8750  
   Motorola MTX-900

   Other Stations and Radios conforming to the systems above will require the Engineer's Approval.

   After the award, the Contractor shall supply a list of equipment to be used with the catalogue cuts to the Engineer.

   The monthly bid price includes also the cost for the repeater, the FCC license application, the turn-on fee and the air time for each equipment.

36. **Fall Protection Requirements**

This project includes work that requires exposure of workers to risks associated with elevated work locations. By issuance of this Special Note, Contractors are 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 Contractor 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.

Requirements of all applicable OSHA Regulations notwithstanding, the minimum fall protection requirements on this project shall include the following:

1. When used, safety belts, lifelines, and lanyards must meet the requirements of Article 1926.104.

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 where no ramp, runway, sloped embankment, or personnel hoist is provided. These devices must meet the requirements of Part 1926 Subpart X. Climbing on 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 Par 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 Article 1926.451. Scaffolds must include a top rail, mid rail, and toe board in compliance with Article 1926.451, on all open sides and ends. Lifelines, belts and lanyards or equivalent means are required to protect workers during installation and removal of the railings, and in situations where physical restrictions preclude installation of a standard railing.

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 all requirements of Article 1926.451. Specifically, the scaffold must be secured to the suspension cables at all times. All persons working on a suspended scaffold must be provided fall protection by means of safety nets meeting the requirements of Article 1926.105, independent lifelines, belts and lanyards (Article 1926.104), or other means meeting the requirements of Article 1926.

6. All workers in approved personnel aerial lifts must wear a body belt or harness with a lanyard attached to the boom or basket, as required by OSHA Article 1926.556.

7. 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 full hazard may be unavoidable. 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 listing summarizes commonly encountered situations where fall protection is required, the heights above which fall protection must be provided, and provides the OSHA reference 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 - wider than 45 in.</td>
<td>10 ft.</td>
<td>1926.451(a)(4)</td>
</tr>
<tr>
<td>Scaffold - 45 in. or less</td>
<td>4 ft.</td>
<td>1926.451(a)(4)</td>
</tr>
<tr>
<td>Impalement Hazard</td>
<td>any exposure</td>
<td>1926.500(d)(5)</td>
</tr>
<tr>
<td>Aerial Lifts</td>
<td>all situations</td>
<td>1926.556(B)(2)(v)</td>
</tr>
<tr>
<td>Swinging Scaffolds (Painter's Scaffold)</td>
<td>6 ft.</td>
<td>1926.451(I)(8)</td>
</tr>
<tr>
<td>Safety Nets</td>
<td>25 ft. (if other means are impractical)</td>
<td>1926.105</td>
</tr>
<tr>
<td>Ladders</td>
<td>varies</td>
<td>1926 Subpart X</td>
</tr>
<tr>
<td>Any Situation Resulting in tripping, impalement, or other severe hazards</td>
<td>any height</td>
<td>1926.20(a)(1) 1926.28(a) P.L.91-596-5(a)(1)</td>
</tr>
</tbody>
</table>

37. **Alcohol and Controlled Substances**

The Contractor must strictly maintain and practice the Department's policy prohibiting the use of alcohol and controlled substances in the workplace.

38. **Facilities for the Engineer**

The Contractor shall provide inspection platforms and other facilities as are required by the Engineer for the inspection of the work. The cost of the said facilities and the work related to the installation of the said facilities shall be included in the price bid for Item 619.01M-Basic Maintenance and Protection of Traffic.
Navigations Ligh:ts, Air Beacons, and/or Street Lighting

Navigation lights, air beacons, and/or street lighting shall be maintained throughout the entire construction period of the contract. The Contractor shall provide temporary navigation lights, air beacons, and/or street lighting to the satisfaction of Engineer should the existing navigation lights, air beacons, and/or street lighting are obstructed and/or enclosed by the Contractor’s containment system. Temporary street lighting shall provide the same light intensity as that of the existing street lighting. The Contractor shall obtain all necessary temporary lighting permits as needed prior to his installation of the temporary navigation lights, air beacons and/or street lighting. Cost incurred for the temporary navigation lights, air beacons, and/or street lighting (including the costs for the Contractor’s obtaining temporary lighting permits) shall be included in the price bid for the various items of the contract, and no separate payment will be made.

Call Boxes on the Bridge

The Contractor shall verify and test all emergency call boxes on the bridge weekly to make certain that all emergency call boxes are maintained throughout the entire construction period of the contract. The Contractor shall notify the Engineer In Charge should any call box have been found to be not active.

Hydrant Pressure

Whenever the Contractor uses water from a hydrant for the pressure wash for the blast cleaning and painting operation, the Contractor shall maintain the water pressure in the hydrant in a manner meeting the requirements of the New York City Department of Environmental Protection. The Contractor shall utilize his own equipment, water tanks, water pumps, and/or take other measures as needed to maintain the water pressure in the said hydrant for the purpose of meeting the requirements of the New York City Department of Environmental Protection to the satisfaction of the Engineer. The Contractor shall obtain the hydrant permit from the New York City Department of Environmental Protection and pay all necessary fees (including but not limited to the hydrant permit fee, the water hydrant usage fee, the water usage fee, etc). The Contractor shall obtain the hydrant permit in person for his work in Brooklyn side from the Brooklyn DEP Water Permit Office, New York City Department of Environmental Protection (Telephone No. 718-852-5032), 248 Duffield Street (Third Floor), Brooklyn, N.Y. 11201. The Contractor shall obtain the hydrant permit in person for his work in Queens side from the Queens DEP Water Permit Office, New York City Department of Environmental Protection (Telephone No. 718-595-4612), 59-17, Junction Boulevard, Corona, N.Y. 11368. All costs incurred for the purpose of meeting the requirements of this note shall be included in Item 18573.1015M.
42. **Air Monitoring**

Continuous air monitoring is required during paint cleaning operation. The air monitoring should be done by an independent consultant retained by the State. The independent consultant shall also monitor waste disposal.

43. **Flashing Arrow Board**

Under Item 619.0303M, flashing arrow boards used shall not be powered by self-contained engine driven generator systems. Instead they shall be energized from utility company service.

44. **Requirements Of United States Coast Guard**

A. **Contractor’s Schedule of Operation**

Two copies of the Contractor’s plan, schedule, and sequence of operations, approved by the Engineer, shall be submitted to the U.S.C.G. for approval preferably 30, but at least 14 days prior to any work over or in the waterway. In addition, a sketch of the project area shall be submitted showing the following: (1) the waterway; (2) the bridge; (3) and the location, height above mean high water and detailed description of any scaffolding or netting to be used. The schedule shall also include the daily hours of operation. The Contractor shall comply with all provisions of the Navigation Rules International - Inland, copies of which are available from the Supt. of Documents, U.S. Government Printing Office, P.O.Box 371954, Pittsburgh, PA 15250 (Refer to Stock No. 050-012-00376-9). One copy of the plan and schedule of operations, approved by the U.S.C.G., will be returned with the U.S.C.G. approval stamp and/or comments as appropriate. No deviation from the approved plan and schedule of operations may be made unless the modification has previously been submitted and approved.

B. **Protection of Navigation**

(a) During the progress of work, should any material, machinery or equipment be lost, dumped, thrown overboard, or sunk so as to obstruct, interfere with or present a hazard to navigation, immediate notice shall be given to the U.S.C.G. and the object shall be removed as soon as possible.

Until removal can be effected, the obstruction shall be properly marked in order to protect navigation.

Notice to the U.S.C.G. shall give a description and location of any such object and action taken or being taken to protect navigation and of action to remove the obstruction.
(b) At no time during the painting and repairs will the waterway be closed to navigation without prior notification and approval of the U.S.C.G.

(c) Positive means shall be taken to prevent hot work, debris, paint, concrete removal from construction or any other construction material from entering the channel area. This includes blast cleaning material and paint. If welding or burning is to take place, some type of flameproof material shall be the uppermost protective containment material. Welding and burning shall cease upon approach of a vessel and shall not start again until the vessel is past the bridge. An observer or observers shall be stationed so as to have unimpeaded view of both upstream and downstream access to the waterway area thereby assuring that all workers can be alerted of a vessel’s approach by appropriate, mechanical means, such as an air horn.

(d) There shall be no change in the horizontal and vertical clearances as a result of the subject work.

(e) Floating equipment shall have a radiotelephone capable of operation from its main control station in accordance with part 26 Title 33, Code of Federal Regulations and shall be monitored during all periods the floating equipment is on station.

(f) All construction equipment placed in the waterway shall be lighted in accordance with the provisions outlined in the Navigation Rules International - Inland.

(g) After work hours or reduced visibility, all paint containment platforms/scaffolding shall be lighted with synchronized quick flashing red lights mounted on each of the four corners. During daylight hours, work danger signs shall be posted for a three mile range. The signs shall face upstream and downstream so as to draw the mariner’s attention to the fact that the clearance has been reduced.

45. Work Affecting Railroad

The Contractor’s attention is drawn to Section 105-09, Work Affecting Railroads in the standard specifications. The following information has been provided by the Long Island Railroad Co:

1. Name of Railroad/s

(a) Owner/Operator: The Long Island Railroad
(b) Trackage Rights: The Long Island Railroad
2. Class of Railroad: Main Track

3. Number of Tracks: 2

4. Number and Frequency of Trains:
   
   (a) Freight: 4/day
   (b) Passenger: 9/day

5. Maximum Authorized Train Speed: 40 MPH

6. Work over and adjacent to the LIRR will generally be permitted between the hours of 10 AM -3 PM.

7. The Contractor shall prevent the fouling of LIRR's tracks. A track is considered fouled when any object is brought closer than twelve feet horizontally from the center of the track and projects above the top of the tie. Any equipment shall be considered fouling the track whether working or not, when positioned in such a way that failure of the equipment, with or without load, can obstruct the track.

   Cranes operating closer than the boom’s length is generally considered fouling and require special attention. The Crane Usage Requirements of the LIRR shall be followed and the Contractor shall provide the LIRR with all required information 30 days prior to any operation requiring the use of cranes.

46. Class A Containment System

   Under Item 18570.1503M, the Contractor shall maintain the specified minimum crossdraft or downdraft velocity in the enclosure during blast cleaning and paint removal operations within the enclosure. In addition to visually demonstrating inward airflow with smoke tubes, the Contractor shall also provide airflow and air pressure measurements with instruments as required by the Engineer.

47. Rolloffs For Paint Removal Waste

   Under Item 571.01M, rolloffs, if used, for storing and shipping of paint removal shall be sealed to prevent blowing and dispersal of waste during loading and while being transported. The sealing of the rolloffs used shall meet the approval of the Engineer.

48. Existing Netting

   Under certain spans of the bridge, there are existing nettings attached to some of the floor beams. These nettings shall be removed and stored prior to cleaning operation and shall be reinstalled upon completion of painting.
General and Safety Requirements for Removal of Existing Steel

In addition to the requirements of Section 589 - Removal of Existing Steel, the Contractor shall conduct all demolition operations in a safe, legal, and responsible manner in accordance with the requirements of Subsection 202-3.01, General and Safety Requirements, of Section 202, Removal of Structures and Obstructions, of the Standard Specifications and shall submit a removal plan signed by a professional engineer registered in the State of New York to the Engineer thirty (30) days prior to the commencement of demolition.

Work Over Leased Active Area

From Span 79 northward to Span 88 in Brooklyn and from Span 90 to Span 103 in Queens, the areas under the viaduct are mostly unimproved land where some industrial activity by lessees is evident. For work over vacant and unused land, the Contractor will be permitted to enclose the areas with temporary work fences. For work over actively used areas, the Contractor is to closely coordinate his work with the occupants below to provide continuous access and continuous operation. The Contractor shall give notice to the occupants at least thirty (30) days prior to the actual start of work in the areas. In these areas, it will be necessary to provide protective devices to protect workers and traffic below from falling debris, water, paint etc.

Certification Requirements

A substantial factor for determining the lowest responsible bidder for projects involving Class A and Class B containment and maintenance painting is that all painting contractors and painting subcontractors must be able to satisfactorily demonstrate their capability and experience to perform the work at a high quality level, safely, in compliance with public health and safety requirements, with a minimum of supervision and direction by the Department.

Contractors for such projects are required to be certified in accordance with QP-1, Standard Procedure for Evaluating Qualifications of Painting Contractors: Field Application to Complex Industrial Structures, and QP-2, Standard Procedure for Evaluating Qualifications of Painting Contractors To Remove Hazardous Paint; requirements of the Painting Contractor Certification Program (PCCP), of the SSPC, The Society for Protective Coatings of Pittsburgh, PA, telephone # 412-281-2331 (ext. 103). In lieu of SSPC/PCCP certification, the Department will accept documentation that demonstrates that the low bidder has established equivalent processes and procedures conforming to the standards set forth in the procedures for SSPC/PCCP QP-1 and QP-2.

The low bidder must submit, prior to award, proof that they are SSPC/PCCP QP-1 and QP-2 certified, or demonstrate that they have established equivalent processes and procedures conforming to the standards set forth in the procedures for SSPC/PCCP QP-1 and QP-2. In the instance when the low bidder intends to subcontract all or a portion of the work, the low bidder must submit a written statement prior to award certifying to the Department that all
painting subcontractors to be used on the project will be SSPC/PCCP QP-1 and QP-2 certified, or have established equivalent processes and procedures conforming to the standards set forth in the procedures for SSPC/PCCP QP-1 and QP-2. If the low bidder fails to provide the required documentation described above, the low bidder will be considered to be a non-responsible bidder and their bid rejected in accordance with the standard specifications.

This requirement will apply to all bridge painting work except for the following: bridge superstructure removal and other work under Section 202, paint removal under Section 741 that is incidental to the main work under an item, small quantities of paint removal under Items 16570.7x, localized paint removal from structural steel by vacuum contained methods necessary for the safe progress of other work on the structural steel, localized painting of bare structural steel and containment of localized steel repair and painting.

Prior to the subcontractor performing the surface preparation/painting application, the Contractor shall submit evidence of the subcontractor’s compliance to this requirement. The Contractor will submit this documentation with the request to the Department for subcontractor approval. The Contractor will be responsible for the subcontractor’s continued compliance with this requirement throughout the duration of the project.

The painting contractor and subcontractor must remain in compliance with this requirement throughout the duration of the project until final acceptance of the work. The Contractor or subcontractor must produce upon request proof that they are SSPC/PCCP certified. If the Contractor’s or subcontractor’s SSPC/PCCP certification expires or is terminated, or they are not performing within the approved frame work of this requirement, a stop work order may be issued in accordance with the standard specifications.

52. Bridge Washing Waste

The solid waste material generated by the pressure washing operation may contain more than 2%, by weight, of organic material. The Contractor is alerted to the need to carefully inspect the structure prior to bidding for the existence of organic matter such as sand, paper, bird nests, animal droppings, other trash and debris, and loose rust and paint. While treatment and disposal of this waste is cover under Item 571.01M, Treatment and Disposal of Paint Removal Waste, the material must be stored in separate containers from the paint waste, and marked as “Bridge Washing Waste.” Requirements are provided in Section 571 of the Standard Specifications, as revised in this contract.

53. Noise Control

Noise intensive operations in proximity to residential areas shall be restricted to daytime hours only – 8:00 AM to 6:00 PM on weekdays (excluding holidays) and 9:00 AM to 5:00 PM on Saturdays, Sundays and Holidays and that noise intensive operations in proximity to schools shall be restricted to days when schools are not in session.
54. **Special Items**

The following work items are Special Items under the Contract:

- Item 564.10M  Structural Steel Replacement
- Item 585.05M  Removal of Rivets – Replacement with H.S. Bolts
- Item 585.10M  Field Drill Holes in Existing Structural Steel
- Item 589.01M  Removal of Existing Steel

55. **Paint Color**

Finish coat color shall be green conforming Federal Standard 595B, number 17773, unless otherwise directed by the Engineer. Viewing shall be done under north standard daylight.

56. **Maintenance of Landscape**

During the course of the project, the Contractor 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 and the rest of the roadway. All areas within the work zone inaccessible to NYCDOT maintenance forces will be kept as clean as possible by the Contractor. Additionally, any vegetation requiring maintenance such as mowing of grass will be maintained to the standard occurring on the remainder of the roadway.

57. **Restoration of Landscape**

All excess materials and debris shall be removed by the Contractor, 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 (i.e., 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 basal area conversion chart. Both trees and newly seeded turf areas shall be cared for and watered by the Contractor 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. Plant not established properly after one year will be replaced and established as many times as is required for successful establishment.
58. Prior to performance of any tree pruning or tree work, the Contractor shall contact New York City Parks’ Department Borough of Brooklyn and Queens forester.

59. Prior to commencement of work, the Contractor will contact NYCDOT Arterial Maintenance unit to arrange for a pre-construction site inspection.

60. Protection of Existing Landscape

Soil compaction, pollution and erosion will be avoided or minimized at all times during the course of the project. Snow fence (DPR standard) will 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 Engineer for storage of materials, equipment, vehicles as well as parking of Contractor’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 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.
DESCRIPTION

Work under this item shall consist of the development and implementation of a Lead Health & Safety Program (LH&SP). The purpose of this program shall be to protect all contractor and subcontractor employees from the harmful effects of lead exposure. The structure(s) on this project is (are) coated with paint containing lead, and any work activities which disturb the paint coating may expose workers to health hazards. Such activities may include abrasive blasting; paint removal using hand or power tools; torchcutting, welding or grinding; rivet busting; use of heat guns; cleanup of paint debris; and cleaning, relocating or dismantling containment systems. Under OSHA regulations, the contractor is fully responsible for the protection of his or her own employees, and any subcontractor employees, from harmful lead exposure.

The LH&SP shall include all of the elements required by the Interim Standard for Lead in Construction (Title 29 Code of Federal Regulations, Part 1926.62), by this specification, and by all other applicable State and Federal laws. Additional Federal regulations that must be complied with include, but are not limited to, the following:

29CFR1910.20 Access to Employee Exposure and Medical Records
29CFR1910.94 Ventilation in Abrasive Blasting
29CFR1910.120 Hazardous Waste Operations & Emergency Response
29CFR1910.132 General Requirements for Personal Protective Equipment
29CFR1910.133 Eye and Face Protection
29CFR1910.134 Respiratory Protection
29CFR1910.141 Sanitation
29CFR1910.100 Air Contaminants
29CFR1926.16 Rules of Construction
29CFR1926.20 General Safety and Health Provisions
29CFR1926.28 Personal Protective Equipment
29CFR1926.32 Definition of Competent Person
29CFR1926.51 Sanitation
29CFR1926.55 Gases, Vapors, Fumes, Dusts and Mists
29CFR1926.57 Ventilation
29CFR1926.59 Hazard Communication
29CFR1926.103 Respiratory Protection
29CFR1926.154 Temporary Heating Devices
29CFR1926.200 Accident Prevention Signs and Tags
29CFR1926.353 Ventilation and Protection in Welding, Cutting and Heating
29CFR1926.354 Welding, Cutting and Heating in Way of Preservative Coatings

The following components of the LH&SP, if required, shall be submitted to the Engineer:
ITEM 18570.XX M LEAD HEALTH & SAFETY PROGRAM
ITEM 18570.XX LEAD HEALTH & SAFETY PROGRAM

- two copies of a written Lead Exposure Control Plan (LECP)
- any revisions or updates to the LECP
- certification of completion of lead training for supervisors and employees
- documentation of respirator fit testing for all employees who will wear respirators
- depersonalized results of all employee medical testing
- documentation of any medical removals, a description of what triggered them, and the corrective measures taken
- lead exposure monitoring results
- documentation of purchase or mobilization of respirators and personal protective equipment (PPE)
- documentation of purchase or mobilization of decontamination facilities
- monthly progress reports

MATERIALS

The contractor shall provide and maintain all of the equipment and materials necessary to develop and implement the Lead Health and Safety Program. Equipment and materials shall meet the requirements of 29CFR1926.62, the New York State Standard Specifications, and all other applicable State and Federal Regulations.

CONSTRUCTION DETAILS

A. LEAD HEALTH & SAFETY PROGRAM (LH&SP)

The contractor shall implement and carry out the LH&SP as described in a written Lead Exposure Control Plan (LECP), with day-to-day supervision by the competent person. The LH&S? shall include, but not be limited to, the following elements:

1. A written LECP
2. Recordkeeping
3. Exposure monitoring
4. Medical surveillance and removal program
5. Notifying employees and the Engineer of the results of exposure monitoring and medical tests
6. Worker and supervisor training
7. Monthly summary reports

EI 95-014

2 OF 11

3/13/95
8. Decontamination facilities
9. Implementation of mandatory hygiene practices
10. Implementation of engineering, administrative and work practice controls
11. Implementation of a Respirator Program
12. Provision of Personal Protective Equipment (PPE), and cleaning or replacement as required
13. Posting and maintenance of warning signs
14. Jobsite inspections

If the contractor can document (by air monitoring or the use of appropriate historical data as described in 29CFR1926.62d(3)) that lead exposure for all employees will be below the OSHA Action Level (AL), then items 3 through 14 are not required.

If the contractor can document (by air monitoring or the use of appropriate historical data as described in OSHA 1926.62d(3)) that the highest employee lead exposure will be above the AL but below the Permissible Exposure Limit (PEL), then items 8 through 14 are not required.

NYSDOT requirements for the LH&SP are the same as described in 29CFR1926.62, with the following exceptions:

1. Except where the contractor can document that employee lead exposure will be below the AL, the contractor shall engage an Industrial Hygienist (IH) meeting one or more of the following qualifications:

   - Current certification by the American Board of Industrial Hygiene.

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

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

The IH shall have the following responsibilities:
ITEM 18570.XX LEAD HEALTH & SAFETY PROGRAM

ITEM 18570.XX LEAD HEALTH & SAFETY PROGRAM

a. Coordinate the development of a written LECP, and of any updates to the LECP.

b. Provide general oversight of all aspects of the LH&SP.

c. Review all employee medical tests and exposure monitoring results and, if necessary, take corrective actions. Intervention by the IH is required if either of the following conditions are encountered on the project:

1) Blood Lead Level (BLL) > 40 μg/dl (micrograms/deciliter) for one or more workers.

2) BLL increase of 10 μg/dl or more between successive tests for any individual worker.

Intervention shall consist of an on-site investigation by the IH, implementation of corrective action, and notification of the Engineer in the next monthly report.

d) Inspect the jobsite at least once a month during work which entails a potential for lead exposure, except where the contractor can document that employee lead exposure will be below the PEL.

e) Coordinate preparation of monthly summary reports.

2. Except where the contractor can document that employee lead exposure will be below the AL, at the end of each month of work which entails potential lead exposure, the contractor shall submit a report to the Engineer which has been reviewed and signed by the IH. This report shall contain the following elements:

a. A summary of the work entailing potential lead exposure which was completed in the past month.

b. A certification that, with the exception of any deficiencies noted, the past month's work has been in compliance with the requirements of 29CFR1926.62, this specification, and all other applicable State and Federal 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
3. Requirements for the written LECP are described under Construction Details Section E. below. NYSDOT requires the LECP to address a number of elements that are not required by 29CFR1926.62.

4. An exit medical exam, as described under Construction Details Section C. below, shall be offered to all employees who were offered an initial medical exam.

5. Except where the contractor can document that employee lead exposure will be below the PEL, a minimum of one decontamination facility is required, as described under Construction Details Section D. below.

6. The LECP and the LH&SP shall be modified as necessary during the life of the contract to comply with any newly issued Federal, State or local regulations, or revisions to existing regulations.

B. LEAD EXPOSURE CONTROL PLAN (LECP)

At least 20 days prior to starting any work which could entail employee exposure to lead, the contractor shall submit two copies of a written Lead Exposure Control Plan (LECP) to the Engineer for review and acceptance. This LECP shall be coordinated with the site-specific Health and Safety Plan required under §107-05, and it relieves the contractor of the responsibility to address lead issues in the general H&S Plan. Any comments or changes suggested by the Engineer shall be reviewed by the contractor for incorporation into the LECP. The contractor shall not begin any work which could entail lead exposure until the LECP has been accepted by the Engineer.

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

Except where the contractor can document that employee lead exposure will be below the AL, the LECP shall be prepared under the direction of the IH.

The LECP shall address all of the elements required by 29CFR1926.62(e)(2)(ii), by this specification, or by other applicable State or Federal regulations. These elements include, but are not limited to, the following:
1. A description of the contractor’s lead health and safety organization, including the responsibilities and qualifications of the IH (if required), the competent person, and the project Health and Safety Officer.

2. A description of each activity which will entail a risk for lead exposure.

3. An initial assessment of anticipated exposure level(s), including any relevant historical exposure monitoring data.

4. A description of arrangements for ensuring that subcontractors, if any, will comply with the LECP.

5. Plans for updating the LECP.

6. Plans for keeping and maintaining records.

7. Plans for worker and supervisor lead training.

8. Plans for performing exposure monitoring, and for notifying employees and the Engineer of results.

9. 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 (as required by 29CFR1926.62(j)(2)(iii)) where blood samples will be analyzed.

10. A description of the engineering, administrative and work practice controls which 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. Also note that other specifications in the contract may require the use of specific exposure control procedures.

11. A respirator program, in accordance with 29CFR1926.62(f)(4), including plans for respirator fit testing and respirator training.

12. A description of the Personal Protective Equipment (PPE) to be provided, and plans for regular laundering or replacement of protective clothing.

13. A description and floor plan of the decontamination facilities to be provided, a description of any hand wash stations to be provided, and a description of the hygiene practices which employees will be required to follow.
14. Plans for posting warning signs in high exposure areas.

15. Plans for regular inspection of the jobsite by the IH and the competent person.

If the contractor can document (by air monitoring or the use of appropriate historical data as described in 29CFR1926.62d(3)) that lead exposure for all employees will be below the OSHA Action Level (AL), then items 7 through 15 are not required.

If the contractor can document (by air monitoring or the use of appropriate historical data as described in OSHA 1926.62d(3)) that the highest employee lead exposure will be above the AL but below the Permissible Exposure Limit (PEL), then items 10 through 15 are not required.

C. MEDICAL TESTING AND EXPOSURE MONITORING SAMPLE ANALYSIS

The contractor shall arrange for employees to receive all medical tests required by 29CFR1926.62. All medical tests shall be completed by, or under the supervision of, a licensed physician. Blood sampling and analysis shall meet the accuracy requirements of 29CFR1926.62(j)(2)(iii), and shall be conducted by an OSHA-approved laboratory. 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

In addition, the contractor shall arrange an exit medical exam consisting of blood sampling and analysis for lead and zinc protoporphyrin (ZPP) levels for all employees who were offered an initial medical exam. An exit exam shall be provided within 5 working days of the time an employee completes or is permanently removed from all on-project work which entails a potential for lead exposure. Exit exams shall also be offered within 5 working days of the time a project is closed down for the winter or for other periods exceeding 30 days in which no work involving potential lead exposure is scheduled or anticipated. All other protocols of the exam are as detailed in 29CFR1926.62(j) for the initial exam.

For employees who are offered an exam but choose not to participate or fail to respond, the contractor shall provide documentation that the exam was offered 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.

The results of all medical tests shall be provided to affected employees within 5 working days of receipt, and to the Engineer in the next monthly report.
The contractor shall arrange exposure monitoring as required by 29CFR1926.62(d). Exposure monitoring samples shall be obtained by the IH, the competent person under the direction of the IH, or other qualified persons as specified in the LECP. The sampling protocol shall be in accordance with the requirements of 29CFR1926.62(d). Exposure monitoring samples shall be analyzed by a laboratory selected by the contractor, using a method which meets the accuracy requirements of 29CFR1926.62(d)(9).

D. DECONTAMINATION FACILITIES

Except where the contractor can document that employee lead exposure will be below the PEL, a minimum of one climate-controlled decontamination facility shall be provided, and shall be utilized by project personnel for the duration of work which entails a potential for lead exposure. The number of facilities to be provided will be dictated by site conditions and by the contractor's sequence of operations, and shall be approved by the IH and the Engineer. Each facility shall consist of a "clean" area where workers can remove and store their street clothing when they arrive on site; a shower room with hot and cold running water, soap and clean towels; and a "dirty" area where workers can remove and store their work clothing and PPE at the end of their work shift. The "clean" area and the "dirty" area shall each have a separate entrance. Decontamination facilities shall be cleaned as required, or at least once every week of use. All waste water generated from showers or as a result of cleaning operations shall either be tested, filtered through a 5 μm filter or considered as lead contaminated, and disposed of in accordance with State and Federal regulations.

METHOD OF MEASUREMENT

A. LEAD HEALTH & SAFETY PROGRAM. The work to develop and implement a Lead Health & Safety Program, except as provided in the separate payment items of this section, will be measured on a lump sum basis.

B. LEAD EXPOSURE CONTROL PLAN (LECP). The work to develop an LECP will be measured on a lump sum basis.

C. MEDICAL TESTING AND EXPOSURE MONITORING SAMPLE ANALYSIS. The contractor will be paid for all reasonable and customary costs incurred, based on receipted bills submitted to the Engineer, plus 5% overhead and profit.

The lump sum of money shown in the itemized proposal for this work will be considered the price bid even though payment will be made only for actual work performed. This lump sum figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figure will be disregarded, and the original price will be used to determine the total amount bid for the contract.
D. DECONTAMINATION FACILITIES. The work to furnish, install, clean, maintain, relocate and remove these facilities as necessary will be measured by the sum total of the number of calendar weeks that each facility is in place and in operation, measured to the nearest calendar week.

BASIS OF PAYMENT

A. LEAD HEALTH & SAFETY PROGRAM. The lump sum price bid shall include labor costs for the IH and the competent person, and the cost of all materials, equipment, and fees necessary to complete the work, except as provided in the separate payment items of this section. Labor costs other than for the IH and the competent person shall be included in the price bid for other items.

Progress payments will be computed in accordance with the following schedule:

1. 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 LH&SP as determined by the Engineer, and the following items (if required) have been completed:
   
   • Certification of completion of lead training for supervisors and employees is provided to the Engineer.
   
   • Certification of completion of respirator training and documentation of respirator fit testing for all employees who will wear respirators is provided to the Engineer.
   
   • Documentation of purchase or mobilization of all required respirators and Personal Protective Equipment (PPE) is provided to the Engineer.
   
   • Documentation of purchase or mobilization of decontamination facilities is provided to the Engineer.
   
   • Documentation of initial medical testing and a summary of the results is provided to employees and the Engineer.
   
   • Documentation of initial exposure monitoring and a summary of the results is provided to employees and the Engineer.
   
   • Warning signs are posted in high exposure areas.

2. 75% of the lump sum price will be paid in proportional amounts over the duration of work which entails a potential for lead exposure. The Engineer will determine a daily rate of payment by dividing 75% of the lump sum amount bid for the Lead Health & Safety Program by the total number of work days which entail a
potential for lead exposure, as shown in the contractor's schedule, without regard to any extension of time. This amount will be used to authorize payment in accordance with §102-17, Article 7. At any time, the Engineer may request the contractor to submit a revised schedule which reflects the actual progress of the work. Failure to submit a revised schedule upon request will result in termination of the progress payments.

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.

3. 10% of the lump sum price will be paid when exit medical exams (if required) have been offered as required and results provided to employees and the Engineer, the final monthly report (if required) 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.

B. LEAD EXPOSURE CONTROL PLAN (LECP). The lump sum price bid shall include the cost of all materials, equipment, and labor necessary to develop the LECP, and to provide two copies to the Engineer. Payment shall be made when the LECP is accepted by the Engineer. Costs to implement and carry out the LECP shall be paid under the other payment items of this section.

C. MEDICAL TESTING AND EXPOSURE MONITORING SAMPLE ANALYSIS. Except as noted below, payment shall include all reasonable and customary costs incurred (based on receipted bills submitted to the Engineer, plus 5% overhead and profit), for the following items as required by this specification: medical tests performed by the clinic, laboratory analysis of samples taken by the clinic, and laboratory analysis of exposure monitoring samples. All other costs related to this work, including worker time and transportation, the cost of providing results to employees and the Engineer, and the cost for collection of exposure monitoring samples, shall be included in the price bid for the Lead Health & Safety Program. Monthly payments will be made for this work based on the amount of receipted bills submitted during the estimate period.

No payments shall be made for additional medical tests or laboratory analysis required due to an increase in the BLL of any employee(s) above the OSHA threshold of 40 \( \mu g/dl \).

D. DECONTAMINATION FACILITIES. The unit price bid per week for each facility shall include the cost of all materials, equipment, labor, ground rental, utility and disposal charges necessary to furnish, install, clean, maintain, relocate and remove the facility as necessary to complete the work.
Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>18570.01M/18570.01</td>
<td>Lead Health &amp; Safety Program</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>18570.02M/18570.02</td>
<td>Lead Exposure Control Plan</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>18570.03M/18570.03</td>
<td>Medical Testing and Exposure Monitoring Sample Analysis</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>18570.04M/18570.04</td>
<td>Decontamination Facilities</td>
<td>Calendar Week</td>
</tr>
</tbody>
</table>
ITEM 18570.1503 M  CLASS A CONTAINMENT SYSTEM FOR PAINT REMOVAL

DESCRIPTION:

This work shall consist of furnishing and installing a total containment enclosure around the immediate work area to contain and collect debris generated during paint removal operations. The work associated with dismantling and moving the enclosure to new locations on the structure as paint removal operations progress, and with removing the enclosure when paint removal operations are completed, is also included. The containment enclosure shall contain all spent materials, dust, and other debris generated: (1) during blast cleaning and paint removal operations; (2) when air blowing or vacuuming the steel surfaces on the structure in preparation for field painting; (3) when collecting and removing paint waste debris. The performance of the containment enclosure will be judged on its ability to prevent visible emissions (releases) of spent materials, dust, or other debris into the environment.

The Class A containment enclosure provided shall be constructed of impermeable materials affixed to a support structure. All seams in containment materials and all joints between the containment enclosure and the bridge shall be sealed by overlapping. An entryway into the work area shall be made using multiple overlapping door tarps. A forced exit air system shall maintain a lower air pressure inside the containment than outside so as to produce an inward air flow at open air entry points. The exhaust system shall be sized to produce a minimum theoretical air movement inside the containment enclosure. Air movement shall be verified by visual inspection. Exit air shall be exhausted into a dust collection system for filtering.

Reference information on containment enclosures can be obtained from the following:

1. SSPC - Guide 61 (CON), Guide for Containing Debris Generated During Paint Removal Operations, Steel Structures Painting Council, Pittsburgh PA.

2. SSPC - Steel Structures Painting Manual, Volume 1, Steel Structures Painting Council, Pittsburgh, PA.


MATERIALS

Materials and equipment as described in Construction Details shall be selected by the contractor and approved by the Engineer prior to use.

CONSTRUCTION DETAILS

Rigid or flexible materials may be used to construct the containment enclosure. Rigid materials shall be impermeable and may be comprised of plywood panels, or corrugated panels of steel, aluminum, reinforced fiberglass, or another suitable material. Flexible materials shall be impermeable and fire retardant. Flexible covers will be allowed for flooring only if the ground and paved surfaces are smooth.
surfaces from which debris can be collected by vacuuming. If a smooth ground surface is not available, rigid materials shall be used for the floor of the enclosure.

A rigid support structure comprised of scaffolding and framing or a flexible support structure comprised of a cabling system may be used as a framework for the enclosure. Containment materials shall be secured to the support structure.

All mating surfaces between the bridge structure and the containment enclosure, and all joints and seams formed in the fabrication of the enclosure shall be sealed. Joints and seams may be sealed by taping or caulking, or by overlapping materials, providing the other provisions of this specification are adhered to. Flexible materials shall be sealed by overlapping. The minimum overlap shall be 610 mm, and the overlapped materials shall be secured by clamping or taping or other suitable methods at intervals not exceeding 610 mm. Multiple overlapping door tarps shall be used for the entryway.

Dust collection equipment shall be 99.9% efficient against the passage of dust and particles 2 microns and greater in size. The size of the exhaust fan system supplied shall be designed to produce an average minimum crossdraft air velocity or an average minimum downdraft air velocity inside the containment enclosure. For enclosures designed with horizontal air flow, the exhaust fan shall have the capacity to produce an average minimum crossdraft velocity of 0.5 m/s, based on theoretical calculations.

Example: The maximum cross-section of the enclosure in the direction of air flow measures 5 m x 4 m (20 square meters). Minimum volume of air required for crossdraft is 10 m³/s (20 m² x 0.5 m/s).

For enclosures designed with vertical air flow, the exhaust fan shall have the capacity to produce an average minimum downdraft velocity of 0.25 m/s, based on theoretical calculations.

Example: The floor space of the enclosure measures 6 m x 5 m (30 square meters). Minimum volume of air movement required for downdraft is 7.5 m³/s (30 m² x 0.25 m/s).

Light intensity by natural or artificial means inside the containment enclosure shall be maintained at a minimum of 535 lx, on the steel surface, throughout surface preparation, inspection, and painting activities. Auxiliary lighting shall be provided as necessary. The contractor shall supply the Engineer with one (1) portable light meter, with a scale of 0 to 535 lx. The meter will be returned to the contractor at the completion of work.

Prior to the start of any abrasive blast cleaning or paint removal work, the contractor shall submit for approval detailed working drawing(s) of the Class A containment system that is to be supplied for each structure. The drawings shall be prepared and stamped by a registered, licensed Professional Engineer.
Six (6) complete copies of the working drawings shall be directly submitted for approval as follows:

- Regional Director - 5 copies
- Director, Structures Design and Const. Division - 1 copy

Upon receipt, 15 working days shall be allowed for the Regional Director to review and approve the contractor's working drawings.

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

1. Plan and elevation of the containment enclosure in relation to the bridge Structure.
2. The type of solid or rigid floor and working platform with appropriate safety and fall protection measures. A description of the method that will be used to provide worker access to the enclosure (personnel lifts, scaffolds, etc.), and the procedures and equipment that will be used to protect workers from falls shall be specified (OSHA Safety and Health Requirements, 29 CFR 1926). If a barge of 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.
3. A description of how the drainage run-off from existing deck drains will be routed through the enclosure.
4. A description of the type of rigid or flexible material(s) for the containment walls, floor, and ceiling.
5. The type of rigid or flexible support structure that will be used for the floor, walls, and ceiling including the method by which the containment enclosure materials are to be affixed to the support structure.
6. The method by which the containment enclosure will be supported or attached to the bridge, i.e. rollers, clamps. Welding, bolting, or similar connections will not be allowed.
7. The method that will be used to seal the joints (seams) formed when fabricating the containment enclosure, and the method that will be used to seal the mating joints between the containment enclosure and the bridge structure.
8. The method that will be used to seal the entryway. At a minimum, the use of multiple overlapping door tarps shall be provided to minimize dust escape through the entryway.
9. The ventilation system including open air make-up points, the dust collector and exhaust fan(s), the location, type of equipment, the manufacturer’s data sheets, and the airflow capacities.

10. The type, size, and configuration of auxiliary lighting that will be provided for inside the containment enclosure.

11. 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.

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 Rating Allowable Stresses defined in AASHTO Manual for Maintenance Inspection of Bridges (current edition).

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.

12. 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.

13. 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. Whenever a structure spans a railroad, the requirements of §105-09 shall apply. 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.

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

Proper operation of the ventilation system shall be maintained after each assembly of the containment and during all phases of work. The Engineer shall require that the contractor visually demonstrate inward airflow movement into the enclosure at air entry points with smoke tubes.

Extreme care shall be taken to prevent emissions (releases) of waste materials when abrasive blast cleaning and paint removal work are being performed near joints that are formed between the enclosure and the bridge structure, and near seams in the enclosure materials.

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

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

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

All air exhausted from the containment enclosure shall pass through the dust collection system.

The effectiveness of the containment enclosure shall be determined by the Engineer, by visual inspection for dust plumes or other visible evidence of emissions (releases) of waste materials into the environment. Throughout the duration of work there shall be no visible discharges. If the Engineer observes a visible discharge, the contractor shall immediately stop work and perform necessary repairs to the containment enclosure or modifications to blast cleaning operations to the Engineer's satisfaction.

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

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

For bridge structures that are located over or adjacent to water, if it is determined by the Engineer that
floating waste materials may accidently form on the water surface they shall be contained from moving upstream or downstream by the use of floating water booms (straw or screens). Floating waste material shall be collected daily, or more frequently, as directed by the Engineer.

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

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

**METHOD OF MEASUREMENT**

Payment will be made at the lump sum price bid.

**BASIS OF PAYMENT**

The lump sum price bid shall include the cost for preparing the working drawings, and all labor, materials and equipment necessary to complete the work. All work shall be done in a manner satisfactory to the Engineer.

Progress payments will be made. They will be based upon the number of work days required to complete all of the abrasive blast cleaning and paint removal work.

Prior to the beginning of any work, the Contractor shall supply the Engineer with an initial estimate of work days required to complete all of the abrasive blast cleaning and paint removal work. This initial estimate will not be considered final. The Engineer may request a revised estimate at any time during the progress of the work.

The Engineer will determine a daily rate of payment using the lump sum price bid, distributed over the estimate of work days. The daily rate will be used to authorize payment in accordance with §102-17, Article 7.

Should the Engineer request a revised estimate and use that estimate to establish a new daily rate, the lump sum bid price shall be reduced by the total of the amounts previously authorized for payment, prior to the establishment of the new daily rate. Failure on the part of the Contractor to supply a revised estimate when requested, will be cause for the progress payment procedure to be immediately terminated.

Progress payments for this work will be made only for days during which abrasive blast cleaning and paint removal work is actually performed.

No payment will be made 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 both of the following are true:

1. A visible emission is observed which indicates failure to perform “in reasonably close
conformity” to the specification requirements.

2. The visible emission is for a similar cause as a previous visible emission which required
work to be stopped and corrective action taken.

Payment deductions will not be made until all work under this item has been completed. At that time,
the total deduction will be calculated as follows:

(Lump Sum Price Bid/Actual # of Work Days) x (# of Days with Substantial Deficiencies)

This amount will be deducted from monies due to the contractor.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>18570. 1503nn M</td>
<td>Class A Containment For Paint Removal</td>
<td>Lump Sum (for each Structure)</td>
</tr>
</tbody>
</table>

NOTE: nn denotes serialized pay item. See §101-53.
DESCRIPTION

This work shall consist of pressure washing, abrasive blast cleaning to remove all paint, rust, millscale, and other corrosion producing contaminants, and painting structural steel surfaces with three (3) full coats of new paint, where indicated by the Contract Documents.

MATERIALS

1. **Paint and Thinner.** Paint and thinner shall be selected from the Department's Approved List, "Moisture-Curing Urethane Paint Systems". No substitutions will be allowed.

   The shelf life of all paint shall be a maximum of 12 months from the date of manufacture. All acceptances of paint shall expire within 12 months from the date of manufacture.

   All paint (primer, intermediate, and finish coats) used on any one structure shall be produced by the same manufacturer.

   Each single coat of paint shall be a color different from the others. The color of the primer and the intermediate paints shall be at the Contractor's option, and shall provide contrast with the underlying substrate. The color of the finish paint shall be as specified in the Contract Documents, or as ordered by the Engineer.

2. **Water for Washing.** Water for pressure washing shall be clean, fresh water. Cleaners, detergents, or other additives will not be allowed. Salt water will not be allowed.

3. **Abrasive for Blast Cleaning.** Abrasive material for blast cleaning may be selected by the contractor. All abrasive shall be free of lead and corrosion producing contaminants. The abrasive selected for use shall be designed to leave a profile of approximately 40 μm to 65 μm in a dense, uniform pattern of depressions and ridges. Silica sand and other types of non-metallic abrasive containing more than 1.0% crystalline (free) silica, by weight, will not be allowed.

4. **Basis of Acceptance.** All primer, intermediate, and finish paint, and thinner material, shall be accepted on the basis of the manufacturer's name, and the product name, appearing on the Department's Approved List.

   Water for washing and abrasive material for blast cleaning shall be approved by the Engineer.

   Only paint and thinner arriving at the work site in new, unopened containers shall be used.

   Containers of paint shall be labeled with the manufacturer's name, product name, batch number, and date of manufacture. Paint that has not been used within 12 months from the date of manufacture shall be removed from the work site.
CONSTRUCTION DETAILS

All structural steel members, railings, downspouts, and other miscellaneous steel items as indicated by the Contract Documents shall be cleaned of all paint, rust, millscale, and corrosion producing products and then painted with three (3) full coats of new paint, the primer coat, the intermediate coat, and the finish coat.

1. **Surface Preparation.** Steel surfaces shall be prepared for painting by a combination of pressure washing and abrasive blast cleaning.

   Pressure washing to remove dirt and debris shall be performed first. Abrasive blast cleaning to remove all paint, rust, and millscale shall be performed second.

   a. **Pressure Washing.** All steel surfaces to be painted shall first be pressure washed, using equipment operating at a minimum pressure of 21.5 MPa, and with a minimum flow of 9.5 L/minute. The pressure washer shall be operated at a distance of 150 mm to 300 mm from the steel surface. Water may be heated. After washing, the surface shall be allowed to dry before subsequent abrasive blast cleaning work is done.

   Pressure washing shall be performed to remove dirt, dust, animal waste, and water soluble contaminants. Clean, fresh water shall be used with sufficient pressure to remove surface contaminants and loose material. Hand scraping and hand scrubbing with a stiff bristled brush will be required as necessary to remove debris. When necessary, oil and grease shall be removed by hand-wiping, using solvents.

   After pressure washing, the cleaned surfaces shall be visually free of dust, dirt, oil and grease, animal waste, salts, and other debris.

   Pressure washing will only be allowed when ambient air temperatures are greater than 4.5 °C and rising. In no case shall pressure washing be performed when in the opinion of the Engineer: spent wastewater will freeze on roadway or bridge surfaces, or in any other way create a hazardous situation.

   During washing operations, a containment shall be suspended around and beneath the work area to contain all paint chips, corrosion residue, and other solid particles that become dislodged by pressure washing (see Note 2). All such solid residue shall be contained, collected, and allowed to air dry for treatment and disposal as hazardous paint removal waste under Item 571.01 M, as directed by the Engineer. The containment provided shall also

---

2 **Note:** The containment for pressure washing is intended to capture solid paint chips and other solid debris that may become dislodged from washing operations. The containment may be constructed of water permeable or water impermeable materials. Spent washwater will not require collection and will be allowed to fall to the underlying road, ground, or waterway, providing the other requirements of this specification are met. The exception for the collection of spent washwater will be for structures over a public water supply. When a bridge crosses a public water supply, the spent washwater must be diverted, or collected, and disposed of on the adjoining land mass, at a location away from the waters edge.
prevent all spray and residue from falling on or interfering with traffic, pedestrians, or surrounding property, above or below the structure. Extreme care shall be exercised to ensure that vehicles, pedestrians, and property are not exposed to the cleaning process.

All structures over water courses shall be washed during the seasonal periods indicated in the Contract Documents. If no schedule is provided, washing shall occur only when adequate flow in the stream exists to dilute possible contaminants. Operations shall be sequenced so as to clean structures over small bodies of water or small streams in the spring of the year, or in a period when flows are greatest. Streams categorized by the Department of Environmental Conservation (DEC) as "CT(s)", i.e. trout spawning, shall be washed prior to July 1 and bridges located at DEC yearling trout stocking sites shall not be washed during April. When washing operations are performed on bridges over a public water supply, e.g., reservoir, or on bridges in the watershed area of New York City water supply, the spent wash water shall be diverted, or collected, and disposed of on the adjoining land mass, at a location away from the waters edge.

To minimize contamination of the washed surfaces, subsequent cleaning, priming and painting work shall be performed within 14 calendar days of the completion of washing work. If more than 14 days pass by or if the steel surfaces become dirty, they shall be rewashed in accordance with this specification, at no additional cost.

b. Commercial Blast Cleaning

All surfaces shall have all paint, rust and rust scale, mill scale, and other corrosion producing contaminants removed by abrasive blast cleaning to bare metal in accordance with SSPC-SP 6, No. 5, Commercial Blast Cleaning.

The surface of the area blast cleaned in any one day shall be no greater than the surface area of steel that can be prime coated in the same working day.

All equipment and compressors used in the cleaning operation shall be equipped with all necessary filters and traps to prevent moisture, oil, and other contaminants from being deposited on clean surfaces.

If recyclable abrasive are used they shall be cleaned of all paint, chips, rust, millscale and other foreign material after each use, and prior to reuse. All equipment used for cleaning abrasive shall be specifically designed for this purpose, and approved by the Engineer.

Special attention shall be given to the edges of beam flanges, angles and plates, bearings, rivets, the heads of nuts and bolts, and similar surfaces that are marginally accessible and difficult to clean. These surfaces are often difficult to access, are labor intensive and hard to clean. To remove heavy deposits of rust and scale, hand pounding using a hammer,
or power tool cleaning using a needle gun or de-scaler may be necessary before abrasive blast cleaning work begins.

All fins, tears, slivers, burred and sharp edges that are present or occur during the blasting operation shall be removed by grinding, and then the area shall be reblasted to provide the required 40 µm to 65 µm deep anchor profile.

Throughout abrasive blast cleaning work, care shall be taken to protect newly painted surfaces from the cleaning operations. Tarps, covers, or other devices approved by the Engineer shall be used to protect new paint from damage. Damaged paint shall be thoroughly wire brushed or if visible damage occurs, reblasted to the required condition, and then repainted. All repair to damaged paint surfaces shall be approved by the Engineer.

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

Corroded and deteriorated surfaces that have been cleaned to bare metal by abrasive blasting shall be accepted by visual comparison to a project prepared standard(s) for each structure. The contractor shall prepare a project standard by abrasive blast cleaning a representative area on the structure that is being prepared for painting. The prepared standard shall generally conform to SSPC VIS 1-89, "Visual Standard For Abrasive Blast Cleaned Steel," Pictorial Standard B SP 6, C SP 6, and D SP 6, as applicable, and shall be approved by the Engineer before the start of general cleaning work. At least one standard shall be prepared for each structure that is being specified for cleaning. More than one standard may be necessary if the cleaned steel differs significantly from the photographic standards due to surface conditions or other factors. Each standard shall be at least 300 mm x 300 mm in size, and shall be located in an area of the structure that is accessible to, and approved by the Engineer. The contractor shall protect the work standard from corrosion and contamination throughout the duration of work by applying a clear coat of polyurethane. At the completion of cleaning work the project standard shall be re-cleaned and painted in accordance with this specification. If in the opinion of the Engineer the project standard becomes deteriorated, or otherwise ineffective, it shall be re-established in accordance with this specification at no additional cost.

2. **Painting.** Painting shall consist of striping and then applying three full coats of new paint to all surfaces cleaned to bare metal. The first full coat shall be primer, followed by the application of a full coat of intermediate paint, and a full coat of finish paint, to all steel surfaces designated to be painted.

a. **Material Storage.** Paint in storage shall be protected from damage and maintained between 4.5°C and 29.5°C.
b. Specifications and Inspection Equipment. Prior to the start of and throughout the duration of work the contractor shall supply the Engineer with the following specifications and equipment. No work shall begin until these materials have been delivered to, and accepted by the Engineer.

1. One bound copy of the Steel Structures Painting Council surface preparation specification, SSPC-SP 6 - Commercial Blast Cleaning.

2. One bound each of the Steel Structures Painting Council pictorial standards, SSPC-VIS 1-89, Visual Standard For Abrasive Blast Cleaned Steel.

3. One bound copy of the Steel Structures Painting Council method SSPC-PA2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness With Magnetic Gages.

4. One Air Thermometer, pocket type, -10°C to +40°C.

5. One Surface Thermometer, -10°C to +40°C.

6. One Magnetic Dry Film Thickness Gage, Type 2 (fixed probe), with a digital readout display capable of measuring 1 μm to 1500 μm in 1 μm increments.

7. Two Wet Film Thickness Gages, Prong Type, capable of measuring 25 μm to 125 μm in 25 μm increments.

c. Atmospheric Conditions. No paint shall be applied when the receiving surface and ambient temperatures are less than 1.5°C or greater than 38°C. No paint shall be applied unless the receiving surface is absolutely dry, but there will be no restriction for humidity or dew point - temperature differential.

In general, no paint shall be applied in the months of December, January, February, or March. If the contractor requests approval to apply paint in winter months, and if in the Engineer's opinion satisfactory results can be achieved, then the substrate shall be enclosed, painted under cover, and protected from the surrounding air. The interior of the enclosure shall be heated and the steel painted when the surface temperature is 10°C or greater. Direct application of heat to the steel surface will not be allowed. The painted steel shall remain enclosed and heated for a minimum of eight hours, or until the applied coating is dry, whichever is longer. No additional payment will be made for the cost of enclosing, heating and protecting paint that has been applied in conditions of cool weather.

When painting inside an enclosure adequate mechanical ventilation shall be supplied to meet OSHA regulations for worker exposure to solvents, fumes, lead and other provisions. When
mechanical ventilation is provided, filtration of the exit air will not be required. No additional payment will be made for the cost of ventilation.

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

e. **Solvents and Thinners.** Paint may be thinned if recommended by the manufacturer and only if approved by the Engineer. Only approved thinner shall be used and added up to a maximum of 60 ml/L.

Thinning shall be performed by pouring one-half of the thoroughly mixed paint into a empty, clean container. The required thinner is then added to one of the half-size portions, and the two portions are remixed to obtain a homogenous mixture.

The paints specified for this work have a limited pot life because of their reaction with the moisture in the atmosphere. The paint will gel when it nears the end of its pot life. Thinning to reduce the viscosity of gelled paint will not be allowed. The pot life of this paint can be extended by covering open containers to reduce exposure to moisture, and by keeping containers of paint cool.

Unauthorized use of solvents and thinners shall result in recleaning and repainting of the surface in accordance with this specification, at the contractors expense.

f. **Paint Application.** No painting shall begin until cleaned surfaces have been inspected and approved by the Engineer. The contractor shall provide safe, stable, and direct access to the work area for the Engineer's inspection.

Paint may be applied using brush, roller or spray methods, unless spray painting is prohibited by the Contract Documents. When spray painting is prohibited, paint shall be applied using brushes or rollers only. All paint shall be applied so as to produce a uniform, even coating free of runs, sags, drips, ridges or other defects.

To ensure adequate paint film thickness, stripe painting using primer shall be required on the following surfaces: all welds, rivets, bolts, nuts, and edges of plates, angles, bearings, lattice pieces or other shapes; and corners and crevices. To provide contrast, paint for stripe coating shall be a color that is different than the color of the receiving surface. The stripe coat may be applied before or after the first full coat of primer is applied. Such striping shall extend a minimum of 25 mm from the edge. To prevent removal of the stripe paint by the following coat of paint, the stripe coat shall be allowed to set-to-touch before the next paint coat is applied. However, on bare metal surfaces the stripe coat shall not be permitted to dry for a period long enough to allow rusting of the unprimed steel.
ITEM 18573.1014 M FIELD CLEANING AND PAINTING - TOTAL REMOVAL
ITEM 18573.1015 M FIELD CLEANING AND PAINTING - TOTAL REMOVAL
(SPRAY PROHIBITED)

Complete protection against paint spatter, spillage, overspray, wind blown paint, or similar releases of paint shall be provided. Covers, tarps, mesh, and similar materials shall be placed around the work area to protect public and private property, pedestrian, vehicular, marine or other traffic, all portions of the bridge, highway appurtenances, waterways, and similar surrounding areas and property, upon, beneath, or adjacent to the structure.

g. Paint Film Thickness. Paint shall be applied in such a quantity so as to produce the minimum specified dry film thickness for the type of paint material being used (see Approved List - Moisture-Curing Urethane Paint Systems).

The dry film thickness shall be determined in accordance with SSPC-PA 2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness with Magnetic Gages, using a Type 2 fixed probe magnetic gages, equipped with a digital readout display.

Areas failing to meet the specified minimum dry film thickness shall be overcoated with the same type of paint to produce at least the total dry film thickness required.

h. Painting Schedule. Primer shall be applied to bare metal surfaces within twelve hours of the cleaning operation and before visible rust appears on the cleaned surface. Failure to apply primer to a bare metal surface within twelve hours or before the appearance of visible rust shall result in recleaning the surface in accordance with this specification, at no additional cost.

All coats of paint shall be overcoated with the subsequent coat in accordance with the time period specified for the paint material that is being used (see Approved List - Moisture-Curing Urethane Paint Systems). To prevent intercoat adhesion failure, recoating with the next coat of primer, intermediate, and finish paint, must be performed within the maximum specified time period, or 14 days, whichever is shorter. If the contractor fails to recoat within the specified time period the surface to be painted shall be recleaned by abrasive blast cleaning to bare metal, and repainted in accordance with this specification, at the contractors expense.

METHOD OF MEASUREMENT

Payment shall be made by the lump sum price bid.
BASIS OF PAYMENT

The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work. The cost of providing protection against damage during pressure washing and paint application shall be included in the bid price. Payment for the containment and disposal of dust and paint waste generated by surface preparation work will be paid for under other items, however, payment for the accumulation of paint removal waste for deposition in the paint removal containers shall be included in this item. Progress payments will be made based on the percentage of the structure cleaned and primed and painted with two full coats of paint in accordance with this specification.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>18573.1014 M</td>
<td>Field Cleaning and Painting - Total Removal</td>
<td>Lump Sum (for each structure)</td>
</tr>
<tr>
<td>18573.1015 M</td>
<td>Field Cleaning and Painting - Total Removal (Spray Prohibited)</td>
<td>Lump Sum (for each structure)</td>
</tr>
</tbody>
</table>

Note: nn denotes serialized pay item. See §101-53
ITEM 15619.6730 M LIGHTING FOR NIGHTTIME OPERATIONS

DESCRIPTION This work shall consist of furnishing, installing, operating, maintaining, moving and removing portable light towers and equipment-mounted lighting fixtures for nighttime construction operations, for the duration of nighttime work on the contract. Nighttime operations consist of work specifically scheduled to occur after sunset and before sunrise.

MATERIALS

None specified.

CONSTRUCTION DETAILS

General - Before nighttime operations may begin; (1) an acceptable lighting plan must be submitted and (2) all required lighting equipment and/or materials must be ready for operation.

Lighting Plan - Thirty days prior to the start of night work, the Contractor shall submit a lighting plan to the Engineer. The lighting plan shall include the following:

- Layout plan showing location of light towers, including both typical spacing and lateral placement.
- Description of light towers to be used.
- Description of electrical power source.
- Attachment and mounting details for lights to be attached to equipment.
- Specific technical details on all lighting fixtures to be provided, including power rating and photometric charts.
- Details on any hoods, louvers, shields, or other means to be used to control glare.
- Lighting calculations confirming that the illumination requirements will be met by the layout plan.

The layout plan shall be on U.S. standard D size sheets (559 mm x 864 mm) at an appropriate scale to adequately describe the work. It shall clearly show the location of all lights necessary for every aspect of work to be done at night.

In addition to the plan sheets, the Contractor shall submit catalog cuts giving the specific brand names,
ITEM 15619.6730 M LIGHTING FOR NIGHTTIME OPERATIONS

model numbers and ratings of the lighting equipment. The submittal shall include power ratings and photometric data.

Light Levels - Tower-mounted luminaires, whether portable, trailer-mounted, or equipment-mounted, shall be of sufficient wattage and/or quantity to provide an average maintained horizontal illuminance equal to or greater than the following over the work area:

<table>
<thead>
<tr>
<th>Level</th>
<th>illuminance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level I</td>
<td>50 lx</td>
</tr>
<tr>
<td>Level II</td>
<td>100 lx</td>
</tr>
<tr>
<td>Level III</td>
<td>200 lx</td>
</tr>
</tbody>
</table>

The uniformity of illuminance, defined as the ratio of the average illuminance to the minimum illuminance over the work area, shall not exceed 5:1.

Illuminance Requirements - Lighting shall be adequate to meet the required level of illuminance and uniformity over the entire area of operation as follows:

Level I - All areas of general construction operations including excavation; cleaning and sweeping; landscaping; planting and seeding. Level I shall also be provided at the area of lane and/or road closures continuously throughout the period of closure, including the setup and removal of the closures.

Level II - Asphalt paving, milling, and concrete placement and/or removal.

Level III - Pavement or structural crack filling, joint repair, pavement patching and repairs, installation of signal equipment or other electrical/mechanical equipment, and other tasks involving fine details or intricate parts and equipment.

For paving and milling operations, including bridge decks, Level II illuminance shall be provided 15 m ahead of and 30 m behind the paving or milling machine. In addition, Level I illuminance shall be provided a minimum of 120 m ahead and 240 m behind the paving or milling machine, or for the entire area of concrete placement or pavement work if less than this distance. This area shall be extended as necessary to incorporate all vehicle and equipment operations associated with the paving operation. The only exception to the requirement for Level I illumination throughout the area of construction operations is that finish rollers can work beyond the area of Level I illumination using floodlights mounted on the roller.

Construction operations shall be deemed to include all work operations by contractor's personnel, including layout and measurements ahead of the actual work.

Equipment - All lighting equipment will be furnished as required and retained by the Contractor after the work is completed. Material and/or equipment shall be in good operating condition and in compliance with applicable safety and design codes.

Lighting Fixtures - Lighting fixtures shall consist of portable ground-mounted or trailer-
ITEM 15619.6730 M LIGHTING FOR NIGHTTIME OPERATIONS

mounted light towers; light towers affixed to paving machines, finishing machines, and milling machines; and floodlights mounted on construction equipment.

Flood lights mounted on construction equipment shall consist of a minimum of two 500 W flood lights facing in each direction to provide a minimum of 10 lx of horizontal illuminance measured 20 m in front of and behind the equipment. Construction equipment that is operating solely in areas illuminated by tower lighting shall not require floodlights.

Portable Generators - The contractor shall provide portable generators to furnish adequate AC power to operate all required lighting equipment. Fuel tank capacity and availability of fuel on site shall be sufficient to permit uninterrupted operation throughout the planned shift. Adequate switches shall be provided to control the various lights. All wiring shall be weatherproof and installed according to local, State, Federal and OSHA requirements. All power sources shall be equipped with a Ground-Fault Circuit Interrupter to prevent electrical shock.

Light Meter - The Contractor shall furnish, for the use of the Engineer, a photometer capable of measuring the level of illuminance. This photometer shall be available to the Engineer for use as necessary to check the adequacy of illumination throughout the nighttime operations.

Equipment Mounting - The Contractor shall provide suitable brackets and hardware to mount lighting fixtures and generators on machines and equipment. Mountings shall be designed so that light fixtures can be aimed and positioned as necessary to reduce glare and to provide the required illuminance. Mounting brackets and fixtures shall not interfere with the equipment operator or any overhead structures, and shall provide for secure connection of the fixtures with minimum vibration.

Portable and Trailer-Mounted Light Towers - Light towers shall be provided as the primary means of illumination, and shall provide Level I illuminance throughout the work area. They shall be supplemented to the extent necessary by lighting fixtures mounted on construction equipment to provide Level II or Level III illuminance where required. Towers shall be sturdy and free-standing without the aid of guy wires or bracings. Towers shall be capable of being moved as necessary to keep pace with the construction operation. Portable towers and trailers shall be positioned to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment.

Light Towers on Paving, Milling, and Finishing Machines - If needed to supplement portable and/or trailer-mounted light towers, towers shall be affixed to paving, milling, and finishing machines to provide the required level of illuminance for the specified distance in front of and behind the machine. Machine mounted light towers shall not exceed a height of 4 m above ground. Luminaires shall be aimed and adjusted to provide uniform illumination with a maximum uniformity ratio of 5:1. The hopper, auger, and screed areas of pavers shall be uniformly illuminated. The operator's controls on all machines shall be uniformly illuminated.

Equipment Lights - All construction equipment, including rollers, backhoes, loaders, and other equipment operating in work areas not illuminated to a minimum of Level I illuminance shall be equipped with floodlights as described above. Whether or not floodlights are provided, all construction equipment shall be equipped with conventional vehicle headlights to permit safe movement in non-
ITEM 15619.6730 M LIGHTING FOR NIGHTTIME OPERATIONS

illuminated areas. Headlights shall not be permitted as the sole means of illumination while working.

Glare Control - All lighting provided under this item shall be designed, installed, and operated to avoid glare that interferes with traffic on the roadway or that causes annoyance or discomfort for residences adjoining the roadway. The contractor shall locate, aim, and adjust the lighting fixtures to provide the required level of illuminance and uniformity in the work area without the creation of objectionable glare. The Engineer shall be the sole judge of when glare exceeds acceptable levels, either for traffic or for adjoining residences.

The contractor shall provide shields, visors or louvers on luminaires as necessary to reduce objectionable levels of glare. As a minimum, the following requirements shall be met to avoid objectionable glare on roadways open to traffic in either direction:

- Tower-mounted luminaires shall be aimed either generally parallel or perpendicular to the roadway.
- All luminaires shall be aimed such that the center of the beam axis is no greater than 60° above the vertical.
- No luminaires shall be permitted that provide a luminous intensity greater than 20,000 cd at an angle of 72° above the vertical.

Existing Roadway Lights - Existing street and highway lighting shall not eliminate the need for the contractor to provide lighting. Consideration may be given to the amount of illumination provided by existing lights in determining the wattage and/or quantity of lights to be provided. Such consideration shall be discussed in the Contractor's lighting plan.

Continuous Operation - The Contractor shall provide sufficient fuel, spare lamps, generators, and qualified personnel to ensure that all required lights will operate continuously during nighttime operation. In the event of any failure of the lighting system, the operation shall be discontinued until the required level of illumination is restored.

Traffic Control Areas - Level I illuminance shall be provided during the setup of lane closures or road closures installed in conjunction with nighttime construction operation and shall be maintained until the closure is removed. Such lighting shall be required at the actual points of closure, including the lane closure tapers. Lighting shall not be required throughout the entire lane closure, except as required at work areas.

METHOD OF MEASUREMENT
Payment for lighting for nighttime operations will be made on a lump sum basis.

BASIS OF PAYMENT
ITEM 15619.6730 M LIGHTING FOR NIGHTTIME OPERATIONS

The lump sum price bid for portable lighting shall include all equipment, materials, and labor necessary to provide, install, operate, and maintain illumination of the nighttime work areas and associated traffic control operations.

Payment will be made at the lump sum price bid as follows:

- Ten percent when the lighting plan has been accepted and satisfactory lighting of nighttime operations has begun.

- The remaining ninety percent will be paid in progress payments per calendar day of nighttime operations completed. The amount of such calendar day payment will be determined by dividing ninety percent of the lump sum amount bid by the total number of days of nighttime operations included in the contractor's current schedule of operations.
ITEM 11637.20 M - FURNISH PORTABLE CELLULAR TELEPHONE EQUIPMENT

DESCRIPTION:

This work shall consist of furnishing and maintaining portable cellular telephone equipment. The equipment will be used by the Engineer in the performance of his official Contract duties.

MATERIALS:

The portable cellular telephone equipment shall meet the following requirements:

- 0.6 Watt transportable cellular telephone(s)
- electronic locking capability
- AC charging unit
- DC lighter plug power cord

CONSTRUCTION DETAILS:

Upon written request of the Engineer, the Contractor shall provide the above designated equipment within one week to the Engineer. Not later than the completion of the contract, the Contractor shall remove the equipment upon written notification from the Engineer that the telephone equipment is no longer required.

METHOD OF MEASUREMENT:

Furnishing portable cellular telephone equipment will be measured as the number of months during which the portable cellular telephone service is operable and provided as specified. Payment units will be measured to the nearest one-quarter month.

BASIS OF PAYMENT:

The unit price shall include the cost of furnishing, maintaining, and removing the telephone equipment as well as any rental and/or basic service charges.
ITEM 11637.21 M - VOICE MESSAGE UNIT CHARGES FOR CELLULAR TELEPHONE SERVICE

DESCRIPTION:

Under this item the Contractor will be reimbursed for voice message unit charges for the cellular telephone(s) provided under Item 11637.20 M - Furnish Portable Cellular Telephone Equipment.

MATERIALS:

Not specified.

CONSTRUCTION DETAILS:

The Contractor shall provide the Engineer with a legible copy of the monthly, or a regular billing period, telephone bills for cellular telephone(s) provided for his or her use. The bills shall show the number of minutes usage, or voice message units, and the total usage charges for the billing period.

METHOD OF MEASUREMENT:

This item will be measured for payment by the dollar amount billed for the minutes usage, or voice message units, shown on the telephone bill for the cellular telephone(s) provided for the Engineer's use. The lump sum of money shown in the itemized Proposal for this work will be considered the price bid even though payment will be made for the billed cost for cellular telephone usage. Should the bidder alter the amount shown, the altered figure will be disregarded and the original price will be used to determine the total amount bid for the contract.

BASIS OF PAYMENT:

Monthly payments for this work will be the actual cost for the number of minutes usage, or voice message units, shown on the telephone bill for the cellular telephone(s) supplied for the Engineer's use. Any other costs incurred in supplying cellular telephone service shall be included in the item for furnishing cellular telephone equipment.
Sensitivity: .35 microvolts for 20 db quieting.
Squelch Sensitivity: 0.2 microvolts
Selectivity: -70 db EIA for two signals on 30 Khz channel spacing.
Frequency Stability: ±0.0005% from -30°C to 60°C temperature range with 25°C reference.
Modulation Acceptance: ±6.5 KHz
Audio Output: 3 watts with less than 5% distortion over 300 to 3000 Hz
Intermodulation: down -70 db

The base station shall exhibit equivalent capabilities as determined by the Engineer to at least one of the units listed below:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Electric</td>
<td>Century II CE5</td>
</tr>
<tr>
<td>Motorola</td>
<td>MAXAR D 33TRA/L43TRB</td>
</tr>
<tr>
<td>RCA</td>
<td>TAC-300 MFA 02</td>
</tr>
</tbody>
</table>

The Contractor shall submit catalog cuts to the Engineer for approval of equivalent units at least one week prior to the expected date of installation.

B. Antenna, Mast, Transmission Line and Mounting Hardware

The Contractor shall furnish a Base Station Antenna which accepts RF energy up to 500 watts in the frequency band from 150 to 174 Mhz, into an impedance of 50 ohms. The antenna shall radiate this energy with a gain of 5 db in an omnidirectional pattern. The VSWR shall not exceed 1.5 to 1. The antenna shall be equipped with a 6 meter mast.

The Base Station Antenna shall be mounted with a heavy duty galvanized steel wall mount set in the exact location and in a manner approved by the Engineer. The antenna and its 6 meter mast shall be adequately grounded for lightning protection according to N.E.C. standards.

The transmission cable shall be 13 mm coaxial cable with corrugated copper outer and copper clad aluminum inner conductors, and foam dielectric and vinyl sheath.

The Contractor shall furnish all necessary connectors, adaptors and installation hardware. The antenna furnished shall have the equivalent capabilities of at least one of the units listed below:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phelps Dodge</td>
<td>220-509</td>
</tr>
<tr>
<td>Decibel Products</td>
<td>DB 258</td>
</tr>
<tr>
<td>KRECO</td>
<td>SC 155A</td>
</tr>
</tbody>
</table>

2 of 4

04/79

M 03/02/95
The transmission line furnished shall have equivalent capabilities of at least one of the units listed below:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phelps Dodge</td>
<td>FXCC12-50</td>
</tr>
<tr>
<td>Andrews</td>
<td>FJ4-50B</td>
</tr>
<tr>
<td>Decibel Products</td>
<td>DB-2034</td>
</tr>
</tbody>
</table>

The Contractor shall submit catalog cuts or descriptions to the Engineer for approval of equivalent units at least one week prior to the expected date of installation.

C. Two-Way Radio FM Mobile

The contractor shall provide and install mobile FM transmitter/receivers as follows:

The mobile unit shall be dash-mounted, with control unit mounted under the dash, an inside speaker and an outside P.A. speaker, a press-to-talk microphone, a vehicular antenna and all necessary power and interconnecting cables. The unit shall have tone controlled squelch and one channel capability in the 150 to 174 Mhz band. The unit shall operate on nominal 12 volts DC, negative ground. The transmitter and receiver parameters shall be the same as those of the base station. The mobile units must exhibit equivalent capabilities, as determined by the Engineer, to at least one of the units listed below:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Electric</td>
<td>Century II CE5</td>
</tr>
<tr>
<td>Motorola</td>
<td>MAXAR D 33TRA/L43TRB</td>
</tr>
<tr>
<td>RCA</td>
<td>TAC-300 MFA 02</td>
</tr>
</tbody>
</table>

The contractor shall submit catalog cuts to the Engineer for approval of equivalent units at least one week prior to the expected date of installation.

Construction Details

Construction Details: The two-way radios and base station shall be for the exclusive use of the project Engineer and the authorized representatives. The two-way radios and base station shall be made available and shall be returned upon 30 calendar days notice from the Engineer-in-Charge.

All equipment shall be fully maintained by the Contractor at all times. At any time that any of the radio units or miscellaneous hardware become inoperative, the Contractor shall immediately replace that unit with one in operational order.

As soon as the radio equipment is installed, the Contractor shall supply qualified instruction to State
ITEM 15634.0428 M - 2-WAY FM RADIO BASE STATION
ITEM 15634.0429 M - 2-WAY FM MOBILE RADIOS

personnel or their authorized representatives to insure the proper operation of the two-way radio communication system and shall acquire all necessary FCC licenses.

Method of Measurement

Two-way FM Radio Base Station shall be measured by the month that the complete base station (including mobile radios) is in operation. Monthly measurement will continue until the Engineer notifies the Contractor in writing that the equipment is no longer needed. Measurements will be made during periods of seasonal shutdown of contract operations provided the equipment remains in operating condition. No measurement will be made for service during periods of contract extension of time where engineering charges are assessed. A one-day deduction will be made for each day during an estimated period that the base station is not available and/or operating properly as determined by the Engineer.

Two-way Mobile Radios - The quantity to be measured for payment under this item shall be the number of month units that the mobile radio units are operable. A month unit is defined as the number of months that each unit is operable.

Basis of Payment

Payment will be made during periods of seasonal shutdown of Contract operations, provided the unit remains in operating condition. No payment will be made for service during periods of Contract extensions of time where engineering charges are assessed.

A one-day deduction will be made for each day during an estimate period that each mobile unit is not available or fully operable as determined by the Engineer.

The daily deduction shall be figured by dividing the monthly rate by thirty (30) days.

The unit price bid per month unit shall include the cost of all labor, material and equipment including instruction and licensing fees, electric power, maintenance charges and any incidental hardware necessary to complete the work.

All equipment shall remain the property of the Contractor.
ITEM: 11634.199901M REMOVE, STORE & REINSTALL PROTECTIVE NETTING

DESCRIPTION:

The work shall consist of removing, storing and reinstalling protective netting, according to the details shown in the contract documents, and at the locations indicated there in or where directed by the Engineer.

MATERIALS:

None specified.

CONSTRUCTION DETAILS:

Remove and reinstall the protective netting as ordered by the Engineer. Contractor shall use utmost care in removing, handling and replacing the netting. The contractor shall be responsible for storing the material at a safe place approved by the Engineer. Any damaged materials shall be replaced. Reinstall the netting to the existing condition or existing method of support or as approved by the Engineer.

Fasteners such as spikes, nails, screws, bolts, nuts and washers shall meet or exceed the standard industrial fastener specification for intended application.

METHOD OF MEASUREMENT:

The work shall be measured in the field as the actual number of square meters of protective netting removed and reinstalled.

BASIS OF PAYMENT:

The bid price shall include the cost of all labor, materials and equipment necessary to complete the work. If any protective netting is damaged, the contractor shall replace it at no cost to the State.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>11634.199901M</td>
<td>Remove, Store &amp; Reinstall Protective Netting</td>
<td>Square Meter</td>
</tr>
</tbody>
</table>
Description. This work shall consist of furnishing and maintaining for the duration of the Contract, a mobile radio system. The system to be provided shall consist of a single frequency desk top base station which shall be installed in the Project Engineer's field office and single frequency mobile radios to be installed in the vehicles designated by the Engineer. The Contractor shall obtain all necessary FCC licenses, permits, and copies of FCC regulations required for the operation of the equipment furnished.

Materials. All electronic circuitry of the equipment described herein shall be completely solid-state. All transmit/receive units shall be FCC type accepted and conform to current EIA Standards. The mobile units shall be installed in the vehicles in accordance with Current EIA Installation Standards.

Equipment List. The Contractor shall furnish equipment in the following listed quantities, in accordance with the referenced paragraphs of this specification.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Spec. Para.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Base Station Transmitter/Receiver</td>
<td>A</td>
</tr>
<tr>
<td>1</td>
<td>Antenna, Mast, Mounting Hardware</td>
<td>B</td>
</tr>
<tr>
<td>1</td>
<td>Microphone</td>
<td>A</td>
</tr>
<tr>
<td>1</td>
<td>Transmission Cable</td>
<td>B</td>
</tr>
<tr>
<td>as required</td>
<td>Mobile Transmitter/Receiver</td>
<td>C</td>
</tr>
<tr>
<td>as required</td>
<td>Mobile Antenna</td>
<td>C</td>
</tr>
</tbody>
</table>

A. Two Way Radio, FM, Base Station

The contractor shall furnish and install a desk top EM Base Station with standard desk microphone. This station shall operate from a nominal 120 volts, 60 hz power source, consuming no more than 50 watts. All necessary interconnecting and power cables shall be furnished. The base station shall provide one channel (T/R) in the 150-174 MHz range. Tone coded squelch shall be provided. The channel provided for use of the Engineer shall not be used by the Contractor or the employees for any purpose other than to contact the Engineer.

A.1 TRANSMITTER

Minimum RF Power Output: 25 watts
Modulation: ±5 KHz for 100% at 1 KHz
Spurious and Harmonic Emissions: down 60 db below carrier
Frequency Stability: ±0.005% of assigned center frequency from -30° C to 60° C
FM Noise: down at least -70 db for mobiles, -55 db for base
Audio Response: within +1 to -3 db over 300 to 3000 hz with 6 db/octave pre-emphasis at less than 3% distortion.

A.2 RECEIVER
DESCRIPTION. This work shall consist of furnishing, for the duration of the contract, a total of ___ motor vehicle(s) for the transportation of Department of Transportation employees or representatives and their equipment. The vehicle(s) will be used by survey crews and/or inspectors for the performance of official duties. In performance of official duties the motor vehicle(s) may be used both “on and off road” as well as used beyond the specific contract limits in order to visit multiple project work sites and/or related sites. State employees assigned to the contract as inspection staff may also use the vehicle for commuting purposes to and from their domicile. The Engineer may use all, part, or none of this item.

MATERIALS. The inspection vehicle(s) shall be as indicated below:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Cab</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front wheel drive compact automobile;</td>
<td>2 or 4 door w/4 seats</td>
</tr>
<tr>
<td></td>
<td>Front wheel drive mid-size automobile;</td>
<td>4 door w/6 seats</td>
</tr>
<tr>
<td></td>
<td>2-wheel drive full size pickup;</td>
<td>regular w/3 seats</td>
</tr>
<tr>
<td></td>
<td>2-wheel drive full size pickup;</td>
<td>extended w/5 seats</td>
</tr>
<tr>
<td></td>
<td>2-wheel drive compact pickup;</td>
<td>regular w/3 seats</td>
</tr>
<tr>
<td></td>
<td>2-wheel drive compact pickup;</td>
<td>extended w/5 seats</td>
</tr>
<tr>
<td></td>
<td>4-wheel drive full size pickup;</td>
<td>regular w/3 seats</td>
</tr>
<tr>
<td></td>
<td>4-wheel drive full size pickup;</td>
<td>extended w/5 seats</td>
</tr>
<tr>
<td></td>
<td>4-wheel drive compact pickup;</td>
<td>regular w/3 seats</td>
</tr>
<tr>
<td></td>
<td>4-wheel drive compact pickup;</td>
<td>extended w/5 seats</td>
</tr>
</tbody>
</table>

Total ___

An equivalent type vehicle may be substituted with the Engineer’s written approval. However, in no case shall the vehicle(s) provided be over four (4) years old or have over 40,000 miles on the odometer as of the delivery date. The supplied vehicle(s) shall be of such durability to carry occupants and equipment over rough terrain and contain sufficient weather protection for both the occupants and equipment.

The vehicle(s) shall be equipped with or meet the following minimum specifications:

1) Engine: Manufacturer's Standard 4 or 6 cylinder
2) Transmission Automatic
3) Drive: Manufacturer's Standard two (2) or four (4) wheel as required above
4) Steering: Power
5) Air Conditioning
6) Interior Option: Manufacturer's base level
7) Mirrors: Left, Right and Center
8) All Standard Manufacturer equipment and accessories including spare tire, jack, owner's manual, etc. shall be included with the vehicle(s).
15637.1096M INSPECTION VEHICLE(S)

An owner’s Policy of liability insurance for the vehicle(s) shall be provided as required by Article 6 of the Vehicle and Traffic Law (Motor Vehicle Financial Security Act) and the vehicle(s) are to be properly registered as required by Article 14 of the Vehicle and Traffic Law (Registration of Motor Vehicles).

A portable revolving sealed beam, amber color, warning light (for placement on the cab roof/vehicle exterior) shall be included for each vehicle provided. The light shall be controlled by a removable power cord connection into the vehicle cigarette lighter, or equivalent as approved by the Engineer. The power connection must be of sufficient length/design for placement as to not interfere with vehicle operation.

CONSTRUCTION DETAILS. The vehicle(s) will be driven by operators possessing a valid driver's license. The vehicle(s) shall be made available and shall be returned upon 14 calendar days notice from the Engineer-in-Charge.

The Contractor shall provide fuel, oil, proper maintenance, tires, and replacement parts as required to keep the vehicle in safe operating condition, and undertake all repairs, including repairs arising from vandalism, accidents or other damages. In the event that any vehicle requires maintenance or repairs which cannot be completed on the same day, a comparable replacement vehicle shall be provided while the vehicle is out of service. If the vehicle is lost or stolen, the Contractor shall replace the vehicle within five (5) business days with a comparable vehicle.

The vehicle shall be provided for this contract and shall be returned to the Contractor within fourteen (14) days after either the final acceptance of work, or substantial completion, whichever comes first. Contractor owned vehicles provided pursuant to this contract shall remain the property of the Contractor throughout and at the completion of the contract period.

Within five (5) business days of receipt of notice to commence work, the Contractor shall make the vehicle available for inspection by the Engineer. Upon determination that the vehicle satisfies requirements, the Contractor shall make arrangements for delivery to the site on the date specified by the Engineer.

METHOD OF MEASUREMENT. The quantity to be paid for under this item will be the number of vehicle calendar weeks during which each vehicle is available for use by the Department's Engineers or representatives. A calendar week is defined as seven consecutive twenty-four hour calendar days.

A proportionate deduction, to the nearest one fourteenth (1/14) vehicle calendar week (1/2 day), will be made for each day, or portion thereof, a vehicle is inoperative or unavailable during its required use under this item.

Basis of Payment. The unit price bid per vehicle calendar week shall include all costs in connection with furnishing properly registered vehicles, maintaining the vehicles (including repairs, tires, lubrication, fuel, washing, etc.), and providing an owner’s policy of liability insurance for the vehicles in conformance with Section 107-06, B, sub-item f., of the Standard Specifications dated January 2, 1995.
Description. This work shall consist of providing a fully operational microcomputer system for the Engineer's field office. This item may be deleted from the Contract.

Materials. The system shall include the following components: microcomputer (see Attachment 1); printer (see Attachment 2); software (see Attachment 3).

The Contractor may also be required to provide, install, and maintain various other microcomputer hardware components and software packages. Such additional items shall be incorporated by Order-on-Contract with compensation to be made in accordance with SS. 109-05. However, profit and overhead shall be computed at 5% instead of the 20% specified in SS. 109-05 B2(6).

Construction Details. The Contractor shall install, prior to the start of work, and maintain, a microcomputer system in the Engineer's field office. The Contractor shall make the system fully operational prior to the start of any contract work. The Contractor shall be responsible for all modifications to the Engineer's field office, such as, but not limited to, the office electrical system, and office telephone system, necessary to make it compatible with and capable of supporting the Microcomputer System. The system shall remain in service until the Engineer requests its removal in writing or the State relinquishes the Engineer's field office in which the system is installed. Data Diskettes and Diskette Storage Containers, as specified in Attachment 1 of this item specification, shall remain the property of the State.

The Contractor shall maintain all furnished equipment and software in good working condition and shall provide replacement due to breakdown, damage, or theft within ten working days.

All equipment and software furnished shall be subject to approval by the Engineer.

Method of Measurement. The microcomputer system will be measured on an "Each" pay unit basis.

Basis of Payment. The price bid for the microcomputer system(s) will include the cost of furnishing, installing, maintaining, and removing all equipment for the system(s).

Seventy percent of the price bid will be paid when the system has been installed and is operational; the balance of thirty percent will be paid at the final estimate.
ATTACHMENT 2: PRINTER SPECIFICATION

The Contractor shall provide the Engineer with a printer, which is totally compatible with the microcomputer, and software provided in Attachments 1 and 3 of this item specification. The printer must function in both a WINDOWS and DOS environment. Any necessary software shall be included.

Specifications:

A) A Hewlett Packard Printer Control Language (HP PCL) Compatible Ink Jet or Laser Printer with a minimum letter quality mode of 4 ppm (pages per minute). A minimum 16 dot-per-millimeter (both horizontal and vertical) printing resolution for text and graphics. An Operator-Accessible Selector (control panel) with functions of paper feed/size, form feed function and other menu selections.

B) A minimum paper tray capacity of 50 sheets

C) Variable pitch characters per 25.4 millimeters (both 10 and 12) with compressed print (17)

The internal typefaces shall offer both scalable and nonscalable fonts.

D) Variable lines per 25.4 millimeters (both 6 and 8)

E) Interface cable (parallel port)

F) Latest user manuals

G) Clear plastic dust cover for printer

H) Steel table-top printer stand

*I) Two replacement toner/print cartridges

*J) 2000 sheets of 75 grams per square meter bond weight, letter quality printer paper (216 mm x 279 mm).

*K) 500 laser printer mailing labels for use in the printer (38 mm x 102 mm label size)

*The Contractor shall replenish the items as required by the Engineer and be of a type acceptable to the Engineer.
ATTACHMENT 3: SOFTWARE SPECIFICATION

The Contractor shall provide the Engineer with the latest available WINDOWS-95 version of the following microcomputer software packages, which are totally compatible with the microcomputer and printer provided in Attachments 1 and 2 of this item specification. The software shall be loaded/installed on the microcomputer and be functioning properly.

A) Windows-95
B) Wordperfect Suite 7
C) PC Anywhere 32 for Windows

It is the Contractor's responsibility to ensure that the Personal Microcomputer supplied also operates the following Software Applications:

1) NYSDOT's Computerized Engineer's Estimate System, CEES
2) NYSDOT's Automated Construction Engineering System, ACES
3) Bentley's Microstation 5.0
ATTACHMENT 1: MICROCOMPUTER SPECIFICATION

The Contractor shall provide the Engineer with one Personal Microcomputer that is 100% IBM compatible and which also meets the following specifications. A WINDOWS-95 environment (with ability to execute DOS programs) is required.

Specifications:

A) A minimum of an 80-586, or Pentium, based Central Processor Unit (CPU) operating at a minimum clock speed of 166 MHZ with an internal hard disk having a formatted capacity of a minimum of 2000 Megabytes labeled C drive. The hard disk must operate at an average access time of <16 milliseconds. The hard disk must allow for direct microcomputer booting.

B) A minimum of 16.0 Megabyte RAM (Random Access Memory) with 640k directly addressable, expandable to 32.0 Megabyte.

C) One (1) 1440K, 89 mm internal disk drive, labeled A, w/controller card

D) A minimum Eight-Speed (8X) CD-ROM Drive

E) Parallel and Serial interface ports

F) Battery operated clock and calendar functions

G) A minimum resolution color graphic capabilities of (1024 X 768), with 1 Megabyte of video RAM

H) Eighty (80) column display function

I) Latest operations manual & diskettes


K) A two (2) Button Mouse

L) Enhanced Keyboard with 101 Keys and number pad with key on-off indicator lights.

Additional Items:

A) High Resolution (EVGA) color 381 mm (minimum) monitor with a maximum DOT Pitch of .28 supporting the required microcomputer graphic capabilities

B) PHONE/LINE SURGE PROTECTOR, 15 amps, four outlets w/circuit breaker control and surge failure indicator light

C) Clear plastic dust cover for microcomputer and a separate dust cover for the keyboard

*D) 100 diskettes, which shall remain the property of the State, and are compatible with the specified disk drive

*E) Diskette storage containers, 2-100 count & 5-10 count, which shall remain the property of the State.

F) A 28800 Baud Fax/Modem meeting the following requirements:

   Windows/DOS Environment Compatible
   Hayes-compatible AT command set
   Group III Fax compatible

G) Fax/Modem/Phone automatic switch

*The Contractor shall replenish the items as required by the Engineer and be of a type, size and capacity acceptable to the Engineer.