Draft OCMC Permit
New York State Dept. of Transportation  
Region 11  
Hunters Point Plaza  
47-40 21st Street  
New York, NY 11101  

Attn: Mr. Bruce Ogurek, P.E.  
Tel.: (718) 482 - 4801

Re: PIN X731.45  
Rehabilitation of Bruckner Expressway  
Viaduct (I-278), Between St. Ann’s Avenue and East 141st Street over  
Bruckner Blvd. & Local Streets in the Bronx  
Borough of The Bronx

DRAFT WORK PERMIT

Stipulations are hereby given to the New York State Dept. of Transportation and its duly authorized representatives,  
to enter upon and restrict the flow of traffic according to the times and schedules as stipulated herein on the Bruckner Expressway (I-278) & Bruckner Blvd. and its ramps for the purpose of removal and replacement of existing roadway deck, installation of shielding, concrete, steel repairs, bridge bearing replacement and structural painting together with all work incidental thereto, subject to the following stipulations:

1. This permit shall be in effect as of

2. BRUCKNER EXPRESSWAY  
   (RFK Bridge to Sheridan Expwy)

   The Permittee may close one (1) lane (northbound) while maintaining two lanes open at all times on the Bruckner Expressway (I-278) from the RFK Bridge to Sheridan Expwy vehicular traffic on weekdays and weekends as follows:

   A. 9:00AM to 2:00PM, Monday to Friday  
   B. 10:00PM to 5:00AM, Monday night to Friday morning  
   C. 11:00PM to 3:00PM, Friday night to Saturday afternoon  
   D. 11:00PM to 3:00PM, Saturday night to Sunday afternoon  
   E. 10:00PM to 5:00AM, Sunday night to Monday morning

   The Permittee may close one (1) lane (southbound) while maintaining two lanes open at all times on the Bruckner Expressway (I-278) from the Sheridan Expwy to the RFK Bridge to vehicular traffic on weekdays and weekends as follows:

   F. 10:00AM to 3:00PM, Monday to Saturday  
   G. 10:00PM to 5:00AM, Monday night to Friday morning  
   H. 10:00PM to 6:30AM, Friday night to Saturday morning  
   I. 10:00PM to 2:00PM, Saturday night to Sunday afternoon

   The Permittee may close two (2) lanes (northbound or southbound) while maintaining one lane open at all times on the Bruckner Expressway (I-278) between RFK Bridge to Sheridan Expwy to vehicular traffic on weekdays and weekends as follows:

   J. 1:00AM to 5:00AM, Tuesday morning to Friday morning  
   K. 1:00AM to 6:30AM, Saturday morning  
   L. 2:00AM to 9:00AM, Sunday morning
3.

**FULL WEEKEND CLOSURE RAMP “RD” & PARTIAL MAINLINE BRUCKNER EXWY**

The Permittee may **fully close entrance Ramp “RD” from East 138th street to northbound Bruckner Expressway and the right two (2) lanes northbound while maintaining two (2) lanes open at all times on the mainline Bruckner Expressway between East 140th Street to East 141st Street** for a **continuous fifty-four (54) hours for six (6) weekends**, while maintaining the detour from 138th Street to the entrance ramps to Bruckner Expressway and Sheridan Expressway for vehicular traffic as follows;

A. Full closure from 11:00PM Friday night to 5:00AM Monday morning.

B. For the removal of existing roadway deck and replacement with cast-in-place accelerated concrete (weekend work only).

C. Coordinate with NYC DOT Signals to have signal progression on Bruckner Boulevard detour from 138th Street to Hunts Point Avenue.

D. Provide NYPD Traffic Enforcement Agents (TEA’s) at East 138th street and Bruckner Blvd. Intersection.

E. Provide minimum lane width of eleven feet (11’) per traffic lane on mainline.

4.

**ONE LANE RAMP CLOSURES (NB, NX, ND, SB & RC)**

The Permittee may close one lane at a time for installation of Stages 1-5A of Ramps “NB”, “NX”, “ND”, “SB” & “RC” while maintaining **at least one (1) eleven feet (11’) wide lane open to vehicular traffic at all times** as follows;

A. Northbound ramps as follows:
   - Ramp NB from Major Deegan Expwy to Bruckner Expwy,
   - Ramp NX from RFK Bridge to Bruckner Expwy,
   - Ramp ND from RFK Bridge to Major Deegan Expwy, and

B. Southbound ramps as follows:
   - Ramp SB from Bruckner Expwy to Major Deegan Expwy, and
   - Ramp RC from Bruckner Expwy to RFK Bridge

C. The contractor shall maintain one (1) lane of traffic on each ramp at all times. A minimum width of 11 feet shall be maintained for traffic lanes.
5. **BRUCKNER BOULEVARD LOCAL STREET CLOSINGS FROM ST. ANN'S AVENUE TO EAST 141ST STREET**

**SOUTHBOUND BRUCKNER BOULEVARD (2 LANES BELOW VIADUCT PLUS 2 LANES OUTSIDE VIADUCT)**

The Permittee may close one lane southbound on Bruckner Blvd below the viaduct or outside the viaduct not simultaneously and while maintaining three lanes open at all times to vehicular traffic as follows;

A. 10:00AM to 4:00PM, Monday to Friday
B. 9:00PM to 5:30AM, Monday night to Friday morning)
C. 9:00PM to 8:00AM, Friday night to Saturday morning
D. 8:00AM to 4:00PM, Saturday
E. 10:00PM to 10:00AM, Saturday night to Sunday afternoon

The Permittee may close two lanes southbound on Bruckner Blvd below the viaduct or outside the viaduct or one below and one outside the viaduct while maintaining two lanes open at all times to vehicular traffic as follows;

F. 11:00PM to 5:00AM, Sunday to Friday
G. 11:30PM to 6:30AM, Friday night to Saturday morning
H. 12:01AM to 9:00AM, Sunday morning

**NORTHBOUND BRUCKNER BOULEVARD (2 LANES BELOW VIADUCT PLUS 2 LANES OUTSIDE VIADUCT)**

The Permittee may close one lane northbound on Bruckner Blvd below the viaduct or outside the viaduct not simultaneously and while maintaining three lanes open at all times to vehicular traffic as follows;

I. 8:30AM to 2:30PM, Monday through Friday
J. 10:00PM to 5:00AM, Monday night to Friday morning
K. 11:00PM to 3:00PM, Friday night to Saturday afternoon
L. 10:30PM to 3:30PM, Saturday night to Sunday afternoon
M. 10:00PM to 5:00AM, Sunday night to Monday morning

The Permittee may close two lanes northbound on Bruckner Blvd below the viaduct or outside the viaduct or one below and one outside the viaduct while maintaining two lanes open at all times to vehicular traffic as follows;

N. 12:01AM to 5:00AM, Monday to Friday
O. 12:01AM to 7:00AM Saturday morning
P. 2:00AM to 9:00AM Sunday morning
The Permittee must adhere to the following options for two lane closures southbound or northbound on Bruckner Blvd while maintaining two lanes open at all times as noted above and below as follows:

Q. Close both lanes below the viaduct and divert the two lanes of traffic to the existing two lanes outside the viaduct.
R. Close both lanes outside the viaduct and divert the two lanes of traffic to the existing two lanes below the viaduct.
S. Close one lane below the viaduct and close one lane outside the viaduct.
T. During the hours stipulated above, parking lanes and/or shoulder may be closed, provided two lanes of traffic are maintained.
U. A minimum width of 11 feet shall be maintained for traffic lanes. All mainline ramps and entrance ramps shall be kept open at all times.

6. **BRUCKNER BOULEVARD INTERSECTIONS**

The Permittee must maintain turning lanes from Bruckner Boulevard to cross streets at all times, either maintaining existing turning lanes or providing temporary turning lanes to/from cross streets and as follows:

A. Critical locations require local street permits to be pulled.
B. **Provide Traffic Enforcement Agents (TEA's) at intersection location as needed.**

C. **138th Street intersection:** Lane closures are permitted during the hours in Stipulation 5 provided one lane of traffic is maintained in each direction.

D. **140th Street intersection:** One lane of traffic shall be maintained in each direction at all times.

E. **141st Street intersection:** One lane of traffic shall be maintained in each direction at all times.

F. Pedestrian access and pedestrian crosswalks shall be maintained open at all times.
7. This permit must be present on site when the approved work is being performed.

8. To reserve a lane or roadway closures on primary, secondary and local streets, the Permittee must obtain a separate permit from OCMC – Highways. OCMC – Highways will facilitate obtaining these “No Fee” permits. Permits for emergency and non-emergency work may be obtained by phone and facsimile to expedite the work. The Permittee or State representative must contact this office at least one business day prior to request and reserve a lane or street closure. This will reserve the street segment(s) for your activities and facilitate the issuance of the appropriate permits. The original permits may be picked up and signed within “seventy-two” hours.

9. Significant lane closures of Arterial Highways where at any time two thirds (2/3) of the number of roadway lanes are closed between 1:00 AM and 6:00 AM or fifty percent or more of the roadway lanes are closed at other times, notification shall be given to the public via the placement of Variable Message Signs (VMS) 7 days prior to the actual closure, when possible.

10. This permit is not valid unless it is signed by both the New York City Department of Transportation representative and the authorized representative of the Permittee.

11. Section 24 - 224, Administrative Code Variance is hereby granted for hours and days stipulated above.

12. A “Holiday Construction Embargo” will be in effect on Gridlock Alert Days from mid-November (the exact dates will be published each year in the New York City Department of Transportation’s OCMC yearly Holiday Embargo release, there are approximately ten (10)) to January 2nd. During this period, no lane or ramp closings will be permitted from 6:00 AM to Midnight except by written permission from the OCMC. This stipulation supersedes all others in this permit.

13. No staging and/or storage sites are authorized or will be permitted unless approved in writing (where owned by New York City) by the New York City Department of Transportation’s Division of Arterial Maintenance and/or the New York City Department of Parks and Recreation (if park land is involved) or (where State owned) by New York State Department of Transportation with New York City concurrence where applicable. Except for State owned sites where City concurrence is not necessary changes in the site or limits can only be made by an amendment to this permit as applicable. A detailed drawing must be submitted and will become an attachment to the amendment. A DPR Permit shall constitute written approval from the Parks Dept.

14. The Permittee agrees to assume all responsibility for injury or damages to private and/or City property caused through the operations of the permit and to save and hold harmless the City of New York and the New York City Department of Transportation from all claims and suits which may arise there from.

15. The Permittee shall be responsible to provide notification to the local Community Board and Borough President’s Office prior to the commencement of work. Additionally, notification shall be made to the local Councilman’s office. Proof of notification must be filed with the OCMC prior to the commencement of work.

16. The Permittee shall notify JTMC at 718-391-0253 or 718-391-0583 prior to his/her proposed traffic lane reductions or street closings for any purpose. The Permittee shall also immediately notify the JTMC upon reopening and in the event of an emergency condition.
17. When events occur at Yankee Stadium, no lane or ramp closures will be permitted as noted below:

A. FOR YANKEE STADIUM

a. From two hours before the event begins until one hour after the event begins, no lane or ramp closures permitted on:
   - Major Deegan Expwy. - southbound.
   - Major Deegan Expwy. - Northbound south of Fordham Road.
   - Bruckner Expwy. - westbound

b. From one hour after the event begins until two hours after the event concludes, no lane or ramp closures permitted on:
   - Major Deegan Expwy. - southbound south of 161st St.

18. The Permittee shall adhere to all pertinent rules and regulations of the New York City Department of Transportation relative to the use and occupancy of street space, the provisions of his agreement and the performance of his/her (or its) work.

19. The Permittee shall adhere to the NYCDOT Bureau of Bridges’ Special Provisions for Landscape Protection, Maintenance and Restoration, items 1.18.15 through 1.18.19, whenever and wherever any of the Permittee’s activities occur within a limited access arterial highway right-of-way. Copies of these provisions may be obtained from the New York City Department of Transportation’s Director of Arterial Maintenance at 212.839.9875.

20. This Permit is limited to activity performed in conformance with this agreement with the New York City Department of Transportation and does not permit any other activities, which could be a hazard or distraction to the roadway user.

21. No deviation or departure from these stipulations will be permitted without the prior written approval of the New York City Department of Transportation. Requests for such modifications shall be submitted to the OCMC a minimum of ten (10) days in advance for consideration.

22. To ensure a traffic flow at all times storage of materials and equipment shall not be permitted within the traveled way of the highway. Storage areas shall be separated from the traveled way by a clear space of 30 feet minimum width, unless such storage is placed behind concrete barrier or permanently installed bridge railing.

23. Any excavations shall be adequately fenced and/or decked over by the Permittee to preclude entry by errant vehicles, pedestrians or animals.

24. The Permittee shall insure that construction materials and/or excavated soil and rocks temporarily stored on slopes are secured by straw bales or other effective means to prevent their movement into the travel way and clear zone (recovery zone) area.

25. When work is performed in or adjacent to sidewalk areas, a safe pedestrian walkway having a minimum width of five (5) feet shall be provided at all times by the Permittee.

26. Any commercial vehicles required by the Permittee’s operations shall enter the Parkway at the nearest entrance to an individual work site and leave the Parkway at the nearest exit thereafter. This Permit shall constitute permission by the Commissioner of the Department of Transportation for the operation of a commercial vehicle “on a parkway” for construction purposes. The Permittee is advised that there may be HBGHT and/or WBGHT restrictions for structures on the Parkway/Drive. The Permittee shall assure that his/her vehicles do not exceed these restrictions.
27. Concurrent with construction work of this contract, if other projects on this and/or adjacent highways are under construction then the Permittee is to become 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 with consultation with NYSDOT.

28. In order to provide an adequate transition for the safe flow of traffic, when the Permittee's (or another Permittee's) work sites are in two (2) different lanes in the same direction, those work sites shall be separated by a distance of at least two (2) miles.

29. Warning signs and traffic safety devices shall be provided, installed, maintained and removed by the Permittee in accordance with the New York State Department of Transportation’s “Manual of Uniform Traffic Control Devices”. The Permittee shall provide the appropriate channelization for traffic approaching and leaving his/her worksite. The Permittee shall provide flag persons, cones, barricades, etc. as required for public safety. The Permittee is responsible for the adequacy of the safety devices.

30. When water is being used at the work site for any purpose (i.e. concrete curing, saw cutting, etc.), the Permittee is required to insure, through any and all appropriate measures, that the water does not freeze on the roadway or sidewalks. The Permittee will be responsible to maintain a clear and safe travel path.

31. During the time a lane closure is permitted, the Permittee may intermittently stop traffic on the adjacent lane(s) of the same roadway for periods not to exceed five (5) minutes in duration for the purpose of transporting or securing equipment that may extend beyond the closed lane(s). A minimum of one (1) hour, or until the traffic queue is relieved, whichever period is shorter, is required between any two such closures.

32. Operation of a crane, derrick, shovel or other similar equipment for any and all work within the streets shall be carried out by the Permittee in accordance with the Rules, Regulations and Requirements of the New York City Department of Transportation and the New York City Department of Buildings and shall comply with all provisions of the New York City Noise Control Code. In addition, if this equipment is to be placed so that any part of the load will be superimposed on the sidewalk or roadway, the Permittee must file, with the New York City Department of Transportation, Office of Construction Mitigation and Coordination, a statement by a Professional Engineer, licensed by the State of New York, certifying the following:

(a) That the sidewalk or roadway area and the supporting subgrade can safely bear the crane load. Should the condition of the sidewalk or roadway area require that the crane load be distributed over a larger area than afforded by the elements of the crane, the engineer shall furnish the full dimensioned details of the load distribution;

(b) That the Engineer has taken all necessary measures to ascertain that there is no vault or subway tunnel underneath the sidewalk area or that if a vault or subway tunnel does exist its roof is sufficiently strong to support the load to be superimposed thereof;

(c) That the sheeting or retaining walls supporting any excavations adjoining the sidewalk or roadway area required to carry a load have been examined by the Engineer and have been found to be sufficiently strong to support the area carrying the crane load. Should the crane be employed making any excavation adjacent to the crane, the Engineer shall specify the sheeting or retaining wall reinforcement required to support the crane.
33. A Holiday Embargo is in effect for the Holidays (as determined by the New York City Office of Payroll Administration) with the following provisions:

When a Holiday falls or is observed by the City of New York on a Monday or Friday no lane or ramp closures are permitted from noon on the previous business day to 6:01 AM on the following business day. For example if the holiday falls or is observed on Friday then no lane closure would be permitted from 12:01 PM on Thursday to 6:01 AM on Monday. If the Holiday falls or is observed on Monday then no lane closure is permitted from 12:01 PM on Friday to 6:01 AM on Tuesday. In addition when a Holiday falls or is observed midweek (Tuesday, Wednesday or Thursday) no lane closures shall be permitted from noon on the previous business day to 6:01 AM on the following business day.

The Holiday Embargo as detailed above is in effect for the following Holidays: New Year's Day, Mother's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. Note: for Thanksgiving Day the Embargo begins on Wednesday at 12 noon and extends to Monday 6 AM, at which time the original stipulations shall be in effect.

A special embargo is in effect for the following holidays: Eve of Rosh Hashanah, Eve of Yom Kippur, Eve of Passover. No lane or ramp closures permitted from 1:00 PM to sundown.

34. Work cannot be performed during the New York City 5 Boroughs Bike Tour and the New York City Marathon, unless granted special permission by the New York City Department of Transportation, Office of Construction Mitigation and Coordination.

35. The Permittee shall comply with the Industrial Code of the State of New York Part (Rule No.) 53 relating to Construction, Excavation and Demolition Operations at or near underground facilities. Additionally, the Permittee shall similarly notify the owners of overhead cables or other electrical or street lighting equipment in the area covered by the Permit.

36. The Permittee is reminded that the appropriate Rules and Regulations that apply to the cleaning and painting of structural steel must be rigidly followed, as specified by NYSDOT Specifications.

37. When a contractor performs work at night, the work site shall be illuminated to the satisfaction of the Engineer-In-Charge (EIC). The EIC shall be the sole judge of when illumination is required.

38. The contractor shall be responsible for identifying his/her construction signage. The identification shall include the contracting agency, the contractor's name and the contract number. This identification shall be placed on the back of all signs.

39. The Permittee shall, at its own expense, be under absolute obligation to determine the location of and provide protection from damage or loss for all subsurface facilities and overhead structures in the permit area. In the event of any damage or loss to such subsurface facilities and overhead structures, the Permittee shall promptly replace or repair such facilities and structures, as directed by the New York City Department of Transportation or other City agency having jurisdiction thereof or by the owner thereof.

40. The City makes no representation as to the character of the fill in the streets, and voids therein, or the condition of the sidewalks. The Permittee accepts full responsibility and liability for any disturbance or damage, which may be caused to adjoining pavements, sidewalks or structures by or in connection with the permit activity. All damaged sidewalk or roadway pavements shall be restored (to the nearest full flag for sidewalks) in conformance with the Standard Specifications of the New York (City/State) Department of Transportation.

41. The Permittee shall furnish and install tarpaulins enclosing the immediate site of his cleaning and painting operations to insure 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. This permit does not constitute approval of either painting or paint removal methodology. All signs and signals shall be protected daily with clean and transparent coverings.
42. The washing of concrete truck drums within the Arterial Highway or city street right-of-way is strictly prohibited unless the contractor utilizes the New York State approved method.

43. **ELECTRICAL INSPECTIONS UNIT (EU)**

Construction Stipulations to Prevent Damage to NYC Electrical Equipment

(a.) The NYC DOT Office of Construction Mitigation and Coordination (OCMC) - Highways must be contacted at telephone number 212-839-9643 or fax number 212-839-8970 at least two weeks prior to the commencement of any work so that a pre-construction inspection may be performed. If any repairs are made by the EU after the pre-construction inspection is performed, EU shall notify OCMC so that the item(s) may be deleted from the inspection list.

(b.) NYSDOT will provide the NYC DOT Electrical Inspections Unit with a weekly schedule prior to the commencement of any excavation work, i.e. trench excavations, landscaping excavations such as for tree or bush pits, all other excavations, guidewall installations or any other installations involving drilling or the use of Hilti-bolts, or any other event when the earth gets moved on all highway surfaces, including grade level and elevated roadways, ramps, overpasses, paved and non-paved shoulder portions, over or adjacent to electrical lines, or adjacent to the roadway, including excavation on shoulders both paved and non-paved surfaces.

(c.) Accessibility to, plus a three-foot minimum clearance, must be made available at any street light, traffic signal or ITS pole, panel box, junction box, ITS system or camera, or any other NYC electrical systems equipment.

(d.) NYCDOT will provide routine maintenance to lights in construction areas.

(e.) 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 NYC will not be damaged. If the contractor damages any materials which are to remain the property of NYC, the damaged materials shall be repaired or replaced in a timely manner, approved by the NYC DOT Electrical Inspections Unit, and at no cost to NYC.

(f.) In the event of damage to electrical lines, including but not limited to electrical conduit, street light poles, pull boxes, panel boxes, junction boxes, cameras, or any other NYC electrical systems equipment on or adjacent to all highway surfaces, including grade level and elevated roadways, ramps, overpasses, paved and non-paved shoulder areas, notice must be made to the Chief of the NYCDOT BU at telephone number 718-786-2825, or 24-hour emergency number 718-433-3340, at the time of such occurrence. An EU inspector will be dispatched to evaluate and document the condition and coordinate the necessary repairs. NYSDOT will conduct any trouble-shooting work. The Permittee shall be permitted to conduct the necessary repairs without delay following notification to NYCDOT. If an EU inspector is not able to respond to the jobsite when the repairs are being performed, NYS will provide pictures and/or other documentation to confirm that the appropriate work has been completed.

44. The Permittee's vehicles shall not exceed the posted weight and/or height restrictions for any street, highway, bridge or viaduct section that he/she must travel upon.

45. During the snow season, the contractor shall be required to post “LIFT PLOW” signs at all locations (in both directions if necessary) where they have installed steel plates.

46. Roads used for the hauling of materials shall be kept free from debris and maintained by the Permittee and left in a condition satisfactory to the engineer-in-charge (EC).
47. On roadways/streets where rush hour parking and/or standing regulations are posted, the Permittee shall modify his schedule to conform to those (rush hour) restrictions.

48. The Permittee shall not park his equipment or store material overnight where it is deemed to be a safety hazard to the traveling public.

49. The Permittee shall not obstruct fire hydrants, crosswalks, pedestrian ramps, fire alarm boxes, bus stops or any public utility while performing his/her work. The Permittee may not move or remove “Bus Stop” signs without prior written approval from both the New York City Department of Transportation and the New York City Transit.

50. This is not a parking permit. The Permittee shall obey all traffic laws and regulations.

51. This Permit may be amended to cover new or unforeseen conditions at the discretion of the New York City Department of Transportation, after consultation with the Permittee. The New York City Department of Transportation reserves the right to cancel this permit at any time for any valid reason.

52. This Permit, unless terminated at the discretion of the New York City Department of Transportation, will expire on

[Signature]

JAY JABER, P.E.
Assistant Commissioner
Permit Management and Construction Control

Bruce Ogurek, P.E.
Director of Construction

TC:tc
5/8/17, 5/18/17

C: Dagher, Forgione, Campbell, Constantine, Situation Room, Police Dept. (Traffic Division), Fire Department, Litigation Support, HQA – Highway Unit 55 Water St., 7th Fl. CC file, Project file
Draft Asbestos Sampling and Analysis Plan
TABLE OF CONTENTS

1.0 INTRODUCTION .................................................................................................................. 1

2.0 SITE DESCRIPTION ............................................................................................................. 1

2.1 Document Review ............................................................................................................. 1

2.1.1 Record Plan Review .................................................................................................... 1

2.1.2 Utility Drawing Review .............................................................................................. 3

2.1.3 Previous Asbestos Survey Reports Review .................................................................. 3

2.2 Field Survey Observations .............................................................................................. 3

2.2.1 Southern End to Westchester Avenue (BIN 1066669) ......................................................... 3

2.2.2 Southern End to the Sheridan Expressway Interchange (BIN 106666A through H) ........ 3

2.2.3 Lafayette Street to the Sheridan Expressway Interchange (BIN 1075310) ....................... 3

2.2.4 Sheridan Expressway Interchange to Wheeler Avenue (BIN 1075819) ........................... 4

2.2.5 Other Observations .................................................................................................... 4

3.0 RECOMMENDED SAMPLE COLLECTION ..................................................................... 4

3.1 Identification of Sampling Areas ..................................................................................... 4

4.0 LABORATORY ANALYSIS .................................................................................................. 7

5.0 LIMITATIONS ..................................................................................................................... 8

TABLES

Table I - Suspect Asbestos-Containing Materials (ACM) – Proposed Sample Collection Plan

APPENDICES

Appendix A – Company Certification
Appendix B – Personnel Certifications
1.0 INTRODUCTION

An asbestos assessment (preliminary investigation) is required to be performed as part of the New York State Department of Transportation (NYSDOT) Rehabilitation of the Bruckner Expressway Viaduct in Bronx County, New York (PIN X731.45, D010319).

The project proposes to rehabilitate an approximately 2 mile portion of the Bruckner Expressway in the Bronx, New York starting at the interchange with the Major Deegan Expressway and ending just beyond the interchange with the Sheridan Expressway. Rehabilitation may include replacing the decks and/or superstructures and repair of other deteriorated elements such as the concrete substructure and bearings to assure continued safe operations.

The following expressway structures are affected by this project:

- BIN 1066669: Southern End to Westchester Avenue, Bronx County
- BIN 106666 A through H : Southern End to the Sheridan Expressway Interchange, Bronx County
- BIN 1075310: Lafayette Street to the Sheridan Expressway Interchange, Bronx County
- BIN 1075819: Sheridan Expressway Interchange to Wheeler Avenue, Bronx County

AKRF, Inc. (AKRF) conducted a preliminary asbestos assessment of the project area to identify any suspect asbestos containing materials (SACM) that may be disturbed or affected by construction/rehabilitation activities. Areas to be inspected for SACM included the areas associated with the structures above within the project limits that will be impacted as detailed below in Section 2.0 - Site Description.

The preliminary asbestos assessment was conducted on April 15, 2016 by Gregory Baird and Steve Schmid, New York State-certified Asbestos Inspectors. Copies of company and personnel certifications are included in Appendix A.

As part of the assessment, AKRF reviewed available documents including record plans and as-built drawings. Details of reviewed documents are provided in Section 2.0. A comprehensive asbestos survey must still be conducted by a NYSDOL-certified asbestos inspector prior to disturbing any SACM.

2.0 SITE DESCRIPTION

This project includes bridge/highway/ramp structures designated for rehabilitation primarily consisting of deck replacement with superstructure and substructure repairs along the Bruckner Expressway. The project area consists of an approximately 2 mile portion of the Bruckner Expressway in the Bronx, starting at the interchange with the Major Deegan Expressway and ending just beyond the interchange with the Sheridan Expressway.

A preliminary site survey was conducted in order to determine which areas might have SACM and to compare the field observations with the record plans. The following site descriptions are as a result of a review of record plans, as built drawings, and field observations.

2.1 Document Review

2.1.1 Record Plan Review

Any ACMs and/or SACMs identified from the record plan review may or may not be impacted depending on the final scope of work.

St. Ann’s Avenue to E 141st Street (BIN 1066669 and 106666A through E):
AKRF reviewed drawings from the State of New York, Department of Public Works, Division of Construction, Interstate Route Connection 516, Bruckner Expressway (St. Ann’s Avenue to E 141st Street), Bronx County, Section 1 Contract 1, Contract Number F.I.B.E. 58-4 approved/dated 1957. These drawings indicated the following ACMs/SACMs:

- Anchor bolt detail – 3 x 1/4” transite washers.
- Conduit housing/cabinet – Ebony asbestos board with beveled edges.
- Expansion joint detail “A” – 3 x 1/8” transite board.
- Alignment Shoe – 2 x 1-2” transite pipe, 1/4” transite for full width of flange, all reinforced bars within 5” of alignment shoe are to be insulated with transite.

Lafayette Avenue to Lowell Street Ramps F, G and H (BIN 1075819 and 1066669):

AKRF reviewed drawings from the State of New York, Contract 3, Contract Number F.I.B.E. 60-1, Bruckner Expressway Ramps F, G and H, dated 1960. These drawings indicated the following ACMs/SACMs:

- Anchor bolt detail – 3 x 1/4” transite washers.
- Detail “A” – 3 x 1/8” transite board.

Bryant Avenue to White Plains Road (BIN 1075819 and 1066669):

AKRF reviewed drawings from the State of New York, Department of Public Works, Division of Construction, Interstate Route Connection 516, Bruckner Expressway (Bryant Avenue to White Plains Road), Bronx County, Section 2 Contract 6, Contract Number F.I.B.E. 66-1 approved/dated 1966. These drawings indicated the following ACMs/SACMs:

- Bronx River Avenue Overpass Unit A – Compressed asbestos sheet packing graphited both sides 1/16” thick.
- Bronx River Avenue Overpass Units B and C – Compressed asbestos sheet packing graphited both sides 1/16” thick to be placed full length on top of pile cap and draped 1” over ends.
- Rosedale Avenue Overpass Units D and E – Compressed asbestos sheet packing 1/16” thick to be placed full length on top of pier back wall and pile cap and draped over ends.
- Bronx River Avenue Overpass Ramp “Y” – Compressed asbestos sheet packing graphited both sides 1/16” thick.

Triborough Interchange (BIN 1066669 and 106666A through E):

AKRF reviewed record plans from the State of New York, Department of Transportation, Office of Engineering, I-278 Bruckner Expressway and Ramps, Rehabilitation at Triborough Interchange, State Highway 171 in New York City, Bronx County, Contract 3A, Contract number D254956 approved/dated 1993. These drawings indicated the following ACMs/SACM:

- 1 line steel railing – Rubber impregnated random fiber pads composed of high quality elastomer with a random distribution of fabric or asbestos fiber.

E 141st Street to Lafayette Avenue (BIN 1066669 and 106666E):
AKRF reviewed drawings from the State of New York, Department of Public Works, Division of Construction, Bruckner Expressway (E 141st Street to Lafayette Avenue), Bronx County, Section 1 Contract 2, Contract Number F.I.B.E. 57-3 approved/dated 1957. These drawings indicated the following ACMs/SACMs:

- Piers 2-25 through 35 and 2-56 through 59 – All reinforcing bars within 5” of alignment shoe are to be insulated with transite, 1” transite for full width flange.
- Detail “A” – 3” x 1/3” transite board

2.1.2 Utility Drawing Review

No utility drawings were provided for review.

2.1.3 Previous Asbestos Survey Reports Review

No previous asbestos survey reports were provided for review.

2.2 Field Survey Observations

2.2.1 Southern End to Westchester Avenue (BIN 1066669)

AKRF performed a visual survey of this structure and the following SACMs were observed:
- Black light post base plates and washers
- Black gaskets beneath side railings
- Concrete skim and/or patching on vertical columns and/or underneath the structure
- Penetration packing/coating by drainage pipes
- Black expansion joint filler and/or tar
- Gaskets/caulking between jersey barriers
- Grey caulking between parapet wall segments
- Caulking between parapets and curbs

2.2.2 Southern End to the Sheridan Expressway Interchange (BIN 106666A through H)

AKRF performed a visual survey of these structures and the following SACMs were observed:
- Black expansion joint filler and/or tar
- Concrete skim and/or patching on vertical columns and/or underneath the structure
- Penetration packing/coating by drainage pipes
- Grey caulking between parapet wall segments
- Caulking between parapet and curbs

2.2.3 Lafayette Street to the Sheridan Expressway Interchange (BIN 1075310)

AKRF performed a visual survey of this structure and the following SACMs were observed:
- Black tar between side rail and walkway
- Black expansion joint filler and/or tar
• Black light post base plates and washers
• Parapet wall caulking
• Concrete skim and/or patching on vertical columns and/or underneath the structure

2.2.4 Sheridan Expressway Interchange to Wheeler Avenue (BIN 1075819)
AKRF performed a visual survey of this structure and the following SACMs were observed:
• Black light post base plates and washers
• Gaskets underneath side railing
• Caulking underneath washers for fencing
• Concrete skim and patching on vertical columns and/or underneath the structure
• Penetration packing/coating by drainage pipes
• Black expansion joint filler and/or tar
• Brick mortar
• Pad/support between brick and concrete parapets
• Grey caulking by curbs

2.2.5 Other Observations
Lane closures were not provided at the time of the site visit. Additional SACMs may be present between layers of roadway surfacing material and in other inaccessible locations. If any SACM is encountered, the contractor must stop work and contact a certified NYSDOL-certified asbestos inspector to confirm the presence or absence of asbestos.

Electrical conduits, boxes and wiring were live at the time of inspection and therefore could not be safely inspected. These items may contain additional SACMs such as wiring, insulation, piping and transite board. Any such SACM expected to be impacted by the work should be sampled and analyzed in accordance with NYSDOT guidelines and federal, state, and local regulations. Materials that cannot be sampled due to safety or other concerns should either be sampled at a later date or presumed to contain asbestos.

3.0 RECOMMENDED SAMPLE COLLECTION
Based on the above preliminary assessment. The following sampling must be performed by a NYSDOL-certified asbestos inspector.

3.1 Identification of Sampling Areas
Table I contains a list of SACMs identified by the document review and/or field observations. A minimum of three bulk samples of each homogeneous material (as determined by the inspector) must be collected for laboratory analysis. The number of samples collected must accurately represent all materials and/or components that may be affected or disturbed by the construction project.
<table>
<thead>
<tr>
<th>Structure</th>
<th>Area</th>
<th>Suspect ACM</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between light post bottom and concrete</td>
<td>Light post base plate (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Beneath light post nut affixing structure in place</td>
<td>Light post washers (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between side railing and concrete</td>
<td>Gasket (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete skim</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete patch</td>
<td>3 per homogenous patched area</td>
<td></td>
</tr>
<tr>
<td>Around drainage pipe penetrations</td>
<td>Penetration packing/coating</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion joint filler (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion Joint tar (if present)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between jersey barriers</td>
<td>Gasket/Caulking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between parapet wall segments</td>
<td>Caulking (Grey)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between parapet and curb</td>
<td>Caulking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Anchor bolt</td>
<td>3 x 1/4” transite washers</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Conduit housing/cabinet</td>
<td>Asbestos board</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>3 x 1/8” transite board</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Alignment shoe</td>
<td>2 x 1-2” transite pipe</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Alignment shoe</td>
<td>1/4” transite for width of flange</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Alignment shoe</td>
<td>Transite insulation on reinforced bars within 5” of shoe</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>BIN 106666 A though H**: Southern end to Sheridan Expressway Interchange</td>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete skim</td>
<td>7</td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion joint filler (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion Joint tar (if present)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Scenario</td>
<td>Material/Procedure</td>
<td>Quantity</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete patch</td>
<td>3 per homogenous patched area</td>
<td></td>
</tr>
<tr>
<td>Around drainage pipe penetrations</td>
<td>Penetration packing/coating</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between parapet wall segments</td>
<td>Caulking (Grey)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between parapet and curb</td>
<td>Caulking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between side railing and concrete</td>
<td>Gasket (black)/Caulking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Anchor bolt</td>
<td>3 x 1/4” transite washers</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>3 x 1/8” transite board</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Conduit housing/cabinet</td>
<td>Asbestos board</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion joint filler (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion Joint tar (if present)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between side railing and roadway</td>
<td>Tar (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between light post bottom and concrete</td>
<td>Light post base plate (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Beneath light post nut affixing structure in place</td>
<td>Light post washers (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between parapet segments</td>
<td>Caulking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete skim</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete patch</td>
<td>3 per homogenous patched area</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion joint filler (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Expansion joint</td>
<td>Expansion Joint tar (if present)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Between light post bottom and concrete</td>
<td>Light post base plate (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Beneath light post nut affixing structure in place</td>
<td>Light post washers (black)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIN 1075310: Lafayette Street to Sheridan Expressway Interchange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beneath fencing washers</td>
<td>Caulk (Grey)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete skim</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>BIN 1075819: Sheridan Expressway Interchange to Wheeler Avenue</td>
<td>Between side railing and concrete</td>
<td>Gasket (black)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Beneath fencing washers</td>
<td>Caulk (Grey)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>On vertical columns and/or underside of structure</td>
<td>Concrete skim</td>
<td>7</td>
</tr>
</tbody>
</table>
4.0 LABORATORY ANALYSIS

The laboratory must analyze bulk samples by Polarized Light Microscopy (PLM) methodology for asbestos content. If PLM results for samples of non-friable organically bound (NOB) materials are negative or less than or equal to one percent asbestos, the laboratory must analyze these samples by Transmission Electron Microscopy (TEM) methodology, per New York State Department of Health guidelines. For all materials, the laboratory should be instructed to analyze by layers, to first positive result.

The laboratory selected to analyze the samples must be accredited for asbestos analyses by the New York State Department of Health Environmental Laboratory Accreditation Program (ELAP).
5.0 LIMITATIONS

Results of this investigation are valid as of the dates on which the investigation was performed. Lane closures were not provided at the time of the site visit. Additional SACMs may be present between layers of roadway surfacing material and in other inaccessible locations. Electrical conduits, boxes and wiring were live at the time of inspection and therefore could not safely be inspected. These areas may contain additional SACMs. This preliminary assessment and sample collection plan is not an asbestos survey report or an abatement specification and cannot be used to meet pre-construction asbestos survey requirements or for specifying removal quantities, methods or techniques.

The required asbestos survey must be performed in accordance with the findings of the sample collection plan; however, any additional SACM observed by the inspector should be sampled and analyzed in accordance with NYSDOT guidelines and applicable regulations. The inspector should determine homogeneity and friability of samples based on physical characteristics of the SACM.

The findings set forth in this report are strictly limited in scope of the evaluation described herein. The conclusions and recommendations presented in the report are based solely on the services and any limitations described in this report. This report may be based solely or partially on data collected, conducted, and provided by AKRF and/or others. No warranty is expressed or implied by usage of such data. Such data may be included in other investigation reports or documentation. This report is intended for the use solely for The New York State Department of Transportation. Reliance by third parties on the information and opinions contained herein is strictly prohibited and requires the written consent of AKRF. AKRF accepts no responsibility for damages incurred by third parties for any decisions or actions taken based on this report. This report must be used, interpreted, and presented in its entirety.
APPENDIX A
AKRF COMPANY LICENSE
New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY  12240

ASBESTOS HANDLING LICENSE

AKRF, Inc.
7th Floor
440 Park Avenue South
New York, NY  10016

FILE NUMBER: 03-0729
LICENSE NUMBER: 28893
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 08/06/2015
EXPIRATION DATE: 08/31/2016

Duly Authorized Representative – Michelle Lapin PE:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Eileen M. Franko,  Director
For the Commissioner of Labor
DMV ID: 338365873

This certificate must be shown to a NYCDEP representative upon request. Report loss immediately to NYCDEP Asbestos Control Program, 8th floor 59-17 Junction Blvd., Flushing, NY 11373

MUST BE CARRIED ON ALL ASBESTOS PROJECTS
Nonstandard Features Forms
# Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Urban Principal Arterial Interstate</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>141,400</td>
<td>Design Speed:</td>
<td>65 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>9,030</td>
<td>% Trucks</td>
<td>12%</td>
</tr>
</tbody>
</table>

## 1. Description of Nonstandard Features
- **Type of Feature (e.g. horizontal curve radius):** Stopping Sight Distance
- **Location:** Mainline (1 location)
- **Standard Value:** 645 ft  
  **Design Speed:** 65 mph
- **Existing Value:** 574 (vertical)
- **Proposed Value:** 574 (vertical)

## 2. Accident Analysis
- **Current Accident Rate:** 1.29 acc/mvm
- **Statewide Accident Rate:** 1.29 acc/mvm
- **Is the NSF a contributing feature to identified accidents?**  
  - **Choose YES or NO:** YES □ NO ●
  - **If YES describe how the feature contributes to accidents:**

## 3. Cost Estimates
- **Cost to fully meet standards:** $4,800,000
- **Cost(s) for incremental improvements:** $3,000,000

## 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)
- ITS warning of slow and stopped traffic ahead could mitigate NSF by lowering operating speed and alerting motorists.

## 5. Compatibility with Future Plans for Adjacent Segments
- The existing stopping sight distance is compatible with the posted speed limits of the adjacent segments of highway.

## 6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF
- Additional Right-of-Way would be required to correct the stopping sight distance at 1 location along this highway segment. Revising the bridge width and vertical and horizontal alignments to correct the stopping sight distance would affect adjacent properties.

## 7. Recommendation
- It is recommended to retain this nonstandard feature.
### Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Urban Principal Arterial Interstate</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>141,400</td>
<td>Design Speed:</td>
<td>65 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>9,030</td>
<td>% Trucks</td>
<td>12%</td>
</tr>
</tbody>
</table>

#### 1. Description of Nonstandard Features

| Type of Feature (e.g. horizontal curve radius): | Shoulder Width |
| Location:                                      | Mainline       |
| Standard Value:                               | Left 4 ft, Right 10 ft |
| Design Speed:                                 | 65 mph         |
| Existing Value:                               | Left 4 ft min, Right 3'-5" |
| Proposed Value:                               | Left 4 ft min, Right 3'-5" |

#### 2. Accident Analysis

<table>
<thead>
<tr>
<th>Current Accident Rate</th>
<th>1.29 acc/mvm</th>
<th>Statewide Accident Rate:</th>
<th>1.29 acc/mvm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the NSF a contributing feature to identified accidents? Choose YES or NO</td>
<td>YES ☐</td>
<td>NO ■</td>
<td></td>
</tr>
<tr>
<td>If YES describe how the feature contributes to accidents</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3. Cost Estimates

| Cost to fully meet standards: | $225,000,000 |
| Cost(s) for incremental improvements: | $110,000,000 |

#### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

Pull off areas could mitigate the nonstandard right shoulder width allowing vehicles to stop outside the travel lane.

#### 5. Compatibility with Future Plans for Adjacent Segments

The existing shoulder width compatible with the adjacent segments of highway.

#### 6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way would be required to correct the shoulder width along this highway segment. Revising the bridge width would affect adjacent properties.

#### 7. Recommendation

It is recommended to retain this nonstandard feature.
### Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Urban Principal Arterial Interstate</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>141,400</td>
<td>Design Speed:</td>
<td>65 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>9,030</td>
<td>% Trucks</td>
<td>12%</td>
</tr>
</tbody>
</table>

#### 1. Description of Nonstandard Features

- **Type of Feature (e.g. horizontal curve radius):** Horizontal Clearance
- **Location:** Mainline

<table>
<thead>
<tr>
<th>Standard Value:</th>
<th>4 ft</th>
<th>Design Speed:</th>
<th>65 mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Value:</td>
<td>3'5&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed Value:</td>
<td>3'5&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2. Accident Analysis

- **Current Accident Rate:** 1.29 acc/mvm
- **Statewide Accident Rate:** 1.29 acc/mvm

- Is the NSF a contributing feature to identified accidents? Choose YES or NO
  - YES ☐
  - NO ■

- If YES, describe how the feature contributes to accidents

#### 3. Cost Estimates

- **Cost to fully meet standards:** $50,000,000
- **Cost(s) for incremental improvements:** $25,000,000

#### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

- Mitigation measures for tight horizontal clearance are not possible in this urban setting.

#### 5. Compatibility with Future Plans for Adjacent Segments

- The existing horizontal clearance is compatible with the adjacent segments of highway.

#### 6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

- Additional Right-of-Way would be required to correct the horizontal clearance along this highway segment. Revising the obstructions would affect adjacent properties.

#### 7. Recommendation

- It is recommended to retain this nonstandard feature.
## Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Interstate Ramp</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>141,400</td>
<td>Design Speed:</td>
<td>50 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>9,030</td>
<td>% Trucks</td>
<td>12%</td>
</tr>
</tbody>
</table>

### 1. Description of Nonstandard Features

- **Type of Feature (e.g. horizontal curve radius):** Stopping Sight Distance
- **Location:** Ramp NB, Ramp SB, Ramp NX, Ramp RC (7 locations)

#### Standard Value:
- Stopping Sight Distance: 425 ft
- Design Speed: 50 mph

#### Existing Value:
- 238 ft min (vertical)
- 400 ft min (horizontal)

#### Proposed Value:
- 238 ft min (vertical)
- 400 ft min (horizontal)

### 2. Accident Analysis

- **Current Accident Rate:** 1.29 acc/mvm
- **Statewide Accident Rate:** 1.29 acc/mvm
- Is the NSF a contributing feature to identified accidents? Choose YES or NO: YES

### 3. Cost Estimates

- Cost to fully meet standards: $27,000,000
- Cost(s) for incremental improvements: $16,000,000

### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

- ITS warning of slow and stopped traffic ahead could mitigate NSF by lowering operating speed and alerting motorists.

### 5. Compatibility with Future Plans for Adjacent Segments

- The existing stopping sight distance is compatible with the posted speed limits of the adjacent segments of highway.

### 6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

- Additional Right-of-Way would be required to correct the stopping sight distance at 7 locations along these highway segments. Revising the ramp width and vertical and horizontal alignments to correct the stopping sight distance would affect adjacent properties.

### 7. Recommendation

- It is recommended to retain this nonstandard feature.
### Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Interstate Ramp</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>141,400</td>
<td>Design Speed:</td>
<td>50 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>9,030</td>
<td>% Trucks</td>
<td>12%</td>
</tr>
</tbody>
</table>

#### 1. Description of Nonstandard Features

| Type of Feature (e.g. horizontal curve radius): | Horizontal Curvature |
| Location: | Ramp NB, Ramp SB, Ramp RC, Ramp NX (7 locations) |
| Standard Value: | 833 ft |
| Existing Value: | 292 ft min |
| Proposed Value: | 292 ft min |

#### 2. Accident Analysis

<table>
<thead>
<tr>
<th>Current Accident Rate</th>
<th>1.29 acc/mvm</th>
<th>Statewide Accident Rate:</th>
<th>1.29 acc/mvm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the NSF a contributing feature to identified accidents?</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>If YES describe how the feature contributes to accidents</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3. Cost Estimates

| Cost to fully meet standards: | $680,000,000 |
| Cost(s) for incremental improvements: | $390,000,000 |

#### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

Curve warning signs with advisory speeds may mitigate the nonstandard feature.

#### 5. Compatibility with Future Plans for Adjacent Segments

The existing horizontal curvature will not affect future plans for the adjacent segments of highway.

#### 6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way would be required to correct the horizontal curvature at 7 locations along this highway segment. Revising the horizontal alignments to correct the horizontal curvature would affect adjacent properties and adjacent highway segments such as the Sheridan Expressway and the RFK Triborough Bridge approaches.

#### 7. Recommendation

It is recommended to retain this nonstandard feature.
### Nonstandard Feature (NSF) Justification Form

**PIN:** X731.45  
**Route No. & Name:** I-278/Bruckner Expressway Viaduct  
**Project Type:** Reconstruction  
**Design Classification:** Interstate Ramp  
**ADT (Design Year):** 141,400  
**Design Speed:** 50 mph  
**DHV (Design Year):** 9,030  
**% Trucks:** 12%

<table>
<thead>
<tr>
<th>Type of Feature (e.g. horizontal curve radius):</th>
<th>Location: Ramp NX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Value:</strong> Left 3 ft, Right 6 ft, Under 4 ft</td>
<td><strong>Design Speed:</strong> 50 mph</td>
</tr>
<tr>
<td><strong>Existing Value:</strong> Left 2'-6&quot;, Right 2'-6&quot;, Under 4 ft</td>
<td><strong>Proposed Value:</strong> Left 2'-6&quot; ft, Right 2'-6&quot;, Under 4 ft</td>
</tr>
</tbody>
</table>

#### 2. Accident Analysis

- **Current Accident Rate:** 1.29 acc/mvm  
- **Statewide Accident Rate:** 1.29 acc/mvm

**Is the NSF a contributing feature to identified accidents? Choose YES or NO**  
YES ☐ NO ■

**If YES describe how the feature contributes to accidents**

#### 3. Cost Estimates

- **Cost to fully meet standards:** $10,000,000  
- **Cost(s) for incremental improvements:** $5,000,000

#### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

Mitigation measures for tight horizontal clearance are not possible in this urban setting.

#### 5. Compatibility with Future Plans for Adjacent Segments

The existing horizontal clearance is compatible with the adjacent segments of highway.

#### 6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way would be required to correct the horizontal clearance along this highway segment. Revising the obstructions would affect adjacent properties.

#### 7. Recommendation

It is recommended to retain this nonstandard feature.
## Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Interstate Ramp</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>141,400</td>
<td>Design Speed:</td>
<td>50 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>9,030</td>
<td>% Trucks</td>
<td>12%</td>
</tr>
</tbody>
</table>

### 1. Description of Nonstandard Features

| Type of Feature (e.g. horizontal curve radius): | Vertical Clearance |
| Location: | Ramp RC |
| Standard Value: | 16 ft | Design Speed: | 50 mph |
| Existing Value: | 14'-6" min |
| Proposed Value: | 14'-6" min |

### 2. Accident Analysis

| Current Accident Rate | 1.29 acc/mvm | Statewide Accident Rate: | 1.29 acc/mvm |
| Is the NSF a contributing feature to identified accidents? | YES ☐ | NO ■ |
| If YES describe how the feature contributes to accidents |

### 3. Cost Estimates

- Cost to fully meet standards: $45,120,000
- Cost(s) for incremental improvements: $27,000,000

### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

- Posted Clearance signs at nonstandard crossings will mitigate oversized vehicles. In addition the nonstandard location is posted on NYSDOT's website for height restricted bridges.

### 5. Compatibility with Future Plans for Adjacent Segments

- The existing vertical clearance is consistent with the adjacent segments of highway.

### 6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

- Revising the vertical alignments to correct the vertical clearances would affect adjacent properties and highway segments.

### 7. Recommendation

- It is recommended to retain this nonstandard feature.
Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>Route No. &amp; Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>X731.45</td>
<td>I-278/Bruckner Expressway Viaduct</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Type:</th>
<th>Design Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reconstruction</td>
<td>Interstate Ramp</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADT (Design Year):</th>
<th>Design Speed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>33,100</td>
<td>40 mph</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DHV (Design Year):</th>
<th>% Trucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,490</td>
<td>12%</td>
</tr>
</tbody>
</table>

1. Description of Nonstandard Features

<table>
<thead>
<tr>
<th>Type of Feature (e.g. horizontal curve radius):</th>
<th>Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stopping Sight Distance</td>
<td>Ramp RD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard Value:</th>
<th>Design Speed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>305 ft</td>
<td>40 mph</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Value:</th>
<th>Proposed Value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>251 ft min (Vertical)</td>
<td>251 ft min (Vertical)</td>
</tr>
</tbody>
</table>

2. Accident Analysis

<table>
<thead>
<tr>
<th>Current Accident Rate</th>
<th>Statewide Accident Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.29 acc/mvm</td>
<td>1.29 acc/mvm</td>
</tr>
</tbody>
</table>

Is the NSF a contributing feature to identified accidents? Choose YES or NO

If YES describe how the feature contributes to accidents

NO

3. Cost Estimates

<table>
<thead>
<tr>
<th>Cost to fully meet standards:</th>
<th>$4,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost(s) for incremental improvements:</td>
<td>$2,000,000</td>
</tr>
</tbody>
</table>

4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

ITS warning of slow and stopped traffic ahead could mitigate NSF by lowering operating speed and alerting motorists.

5. Compatibility with Future Plans for Adjacent Segments

The existing stopping sight distance is compatible with the posted speed limits of the adjacent segments of highway.

6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way would be required to correct the stopping sight distance at this location. Revising the ramp width and vertical and horizontal alignments to correct the stopping sight distance would affect adjacent properties.

7. Recommendation

It is recommended to retain this nonstandard feature.
### Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Interstate Ramp</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>33,100</td>
<td>Design Speed:</td>
<td>40 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>2,490</td>
<td>% Trucks</td>
<td>12%</td>
</tr>
</tbody>
</table>

1. Description of Nonstandard Features

| Type of Feature (e.g. horizontal curve radius): | Vertical Grade |
| Location: | Ramp RD |
| Standard Value: | 6% |
| Existing Value: | 6.9% |
| Proposed Value: | 6.9% |

2. Accident Analysis

| Current Accident Rate | 1.29 acc/mvm | Statewide Accident Rate: | 1.29 acc/mvm |
| Is the NSF a contributing feature to identified accidents? Choose YES or NO | YES | NO |

3. Cost Estimates

| Cost to fully meet standards: | $70,000,000 |
| Cost(s) for incremental improvements: | $40,000,000 |

4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

Ramp is an entrance ramp with vehicles starting at slow speed up ramp. No mitigation measures required.

5. Compatibility with Future Plans for Adjacent Segments

The existing vertical grades are consistent with the adjacent segments of highway.

6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way would be required to correct the vertical grade along this entrance ramp. Revising the vertical alignment to correct the grades would affect adjacent properties and highway segments.

7. Recommendation

It is recommended to retain this nonstandard feature.
### Nonstandard Feature (NSF) Justification Form

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>Route No. &amp; Name:</th>
<th>I-278/Bruckner Expressway Viaduct</th>
<th>Project Type:</th>
<th>Design Classification:</th>
<th>Interstate Ramp</th>
<th>ADT (Design Year):</th>
<th>Design Speed:</th>
<th>40 mph</th>
<th>DHV (Design Year):</th>
<th>% Trucks</th>
<th>12%</th>
</tr>
</thead>
</table>

#### 1. Description of Nonstandard Features

| Type of Feature (e.g. horizontal curve radius): | Horizontal Clearance |
| Location: | Ramp RD |
| Standard Value: | Left 3 ft, Right 6 ft, Under 4 ft |
| Design Speed: | 40 mph |
| Existing Value: | Left 2 ft, Right 2 ft, Under N/A |
| Proposed Value: | Left 2 ft, Right 2 ft, Under N/A |

#### 2. Accident Analysis

<table>
<thead>
<tr>
<th>Current Accident Rate</th>
<th>1.29 acc/mvm</th>
<th>Statewide Accident Rate:</th>
<th>1.29 acc/mvm</th>
</tr>
</thead>
</table>

Is the NSF a contributing feature to identified accidents? Choose YES or NO

YES ☐
NO ■

If YES describe how the feature contributes to accidents

3. Cost Estimates

| Cost to fully meet standards: | $5,000,000 |
| Cost(s) for incremental improvements: | $3,400,000 |

4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve, ITS for non-standard LOS, etc.)

Mitigation measures for tight horizontal clearance are not possible in this urban setting.

5. Compatibility with Future Plans for Adjacent Segments

The existing horizontal clearance is compatible with the adjacent segments of highway.

6. Social, Economic & Environmental Factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way would be required to correct the horizontal clearance along this highway segment. Revising the obstructions would affect adjacent properties.

7. Recommendation

It is recommended to retain this nonstandard feature.
### Nonstandard Feature Justification

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X720.31</th>
<th>Route No. &amp; Name:</th>
<th>Ramp from RFK Bridge to Northbound I-87 Major Deegan Expwy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Bridge Deck Replacement</td>
<td>Design Classification:</td>
<td>Interstate (Ramp)</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>27,580</td>
<td>Design Speed:</td>
<td>50 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>2,206</td>
<td>% Trucks:</td>
<td>9%</td>
</tr>
</tbody>
</table>

### 1. Description of Nonstandard Feature

| Type of Feature (e.g., horizontal curve radius): | Horizontal Curvature |
| Location: | Ramp from RFK Bridge to Major Deegan Expwy |
| Standard Value: | 833 ft min. |
| Existing Value: | 250 ft min. |
| Proposed Value: | 250 ft min. |

### 2. Accident Analysis

| Current Accident Rate: | acc/mvm or acc/mev (1.43) |
| Statewide Accident Rate: | acc/mvm or acc/mev (1.12) |
| Is the NSF a contributing feature to identified accidents? | YES [x] |
| Choose YES or NO | NO [ ] |

Based on accident analysis, horizontal curvature is not a contributing factor to the accident rate at this location.

### 3. Cost Estimates

| Cost to Fully Meet Standards: | $16 m + cost of ROW and corrections at adjacent facilities |
| Cost(s) For Incremental Improvements: | $ Not evaluated. |

### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve; ITS for non-standard LOS, etc.)

Curve warning signs with advisory speeds may mitigate the nonstandard feature.

### 5. Compatibility with Future Plans for Adjacent Segments

The existing horizontal curvature will not affect future plans for the adjacent segments of highway.

### 6. Social, Economic & Environmental factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way would be required to correct the horizontal curvature at this highway segment. Revising the horizontal alignments to correct the horizontal curvature would affect adjacent properties and adjacent highway segments such as the Major Deegan Expressway (I-87) and the RFK Triborough Bridge approach. There is a tunnel under the ramp that limits options for relocating piers on a revised alignment.

### 7. Recommendation

Existing horizontal curvature will be retained, due to the limited scope of the project and for cost efficiency.

### NOTES:

1. Use accidents per million vehicle miles (acc/mvm) for linear highway segments; use accidents per million entering vehicles (acc/mev) for intersections.
## Nonstandard Feature Justification

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X720.31</th>
<th>Route No. &amp; Name:</th>
<th>Ramp from RFK Bridge to Northbound I-87 Major Deegan Expwy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Bridge Deck Replacement</td>
<td>Design Classification:</td>
<td>Interstate (Ramp)</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>27,580</td>
<td>Design Speed:</td>
<td>50 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>2,206</td>
<td>% Trucks:</td>
<td>9%</td>
</tr>
</tbody>
</table>

### 1. Description of Nonstandard Feature

<table>
<thead>
<tr>
<th>Type of Feature (e.g., horizontal curve radius):</th>
<th>Vertical Stopping Sight Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location: Ramp from RFK Bridge to Major Deegan Expwy</td>
<td>Ramp from RFK Bridge to Major Deegan Expwy</td>
</tr>
<tr>
<td>Standard Value: 425 ft</td>
<td>Design Speed: 50 mph</td>
</tr>
<tr>
<td>Existing Value: 282 ft min.</td>
<td></td>
</tr>
<tr>
<td>Proposed Value: 282 ft min.</td>
<td></td>
</tr>
</tbody>
</table>

### 2. Accident Analysis

<table>
<thead>
<tr>
<th>Current Accident Rate:</th>
<th>Statewide Accident Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>acc/mvm or acc/mev (1.43)</td>
<td>acc/mvm or acc/mev (1.12)</td>
</tr>
</tbody>
</table>

Is the NSF a contributing feature to identified accidents? **YES**

If YES, describe how the feature contributes to accidents:

Based on accident analysis, stopping sight distance is not a contributing factor to the accident rate at this location.

### 3. Cost Estimates

<table>
<thead>
<tr>
<th>Cost to Fully Meet Standards:</th>
<th>$16.4 m + ROW impacts and corrections at adjacent facilities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost(s) For Incremental Improvements:</td>
<td>$13 m</td>
</tr>
</tbody>
</table>

### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve; ITS for non-standard LOS, etc.)

ITS warning of slow and stopped traffic ahead could mitigate NSF by lowering operating speed and alerting motorists.

### 5. Compatibility with Future Plans for Adjacent Segments

The existing vertical stopping sight distance is compatible with the posted speed limits of the adjacent segments of highway.

### 6. Social, Economic & Environmental factors that weigh in the decision to retain or propose the NSF

Additional Right-of-Way could be required to correct the vertical stopping sight distance. Revising the ramp width and vertical and horizontal alignments to correct the vertical stopping sight distance would affect adjacent highway facilities.

### 7. Recommendation

Existing vertical stopping sight distance should be retained.

## NOTES:

1. Use accidents per million vehicle miles (acc/mvm) for linear highway segments; use accidents per million entering vehicles (acc/mev) for intersections.
### Nonstandard Feature Justification

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X720.31</th>
<th>Route No. &amp; Name:</th>
<th>Ramp from RFK Bridge to Northbound I-87 Major Deegan Expwy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Bridge Deck Replacement</td>
<td>Design Classification:</td>
<td>Interstate (Ramp)</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>27,580</td>
<td>Design Speed:</td>
<td>50 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>2,206</td>
<td>% Trucks:</td>
<td>9%</td>
</tr>
</tbody>
</table>

1. **Description of Nonstandard Feature**

<table>
<thead>
<tr>
<th>Type of Feature (e.g., horizontal curve radius):</th>
<th>Horizontal Stopping Sight Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Ramp from RFK Bridge to Major Deegan Expwy</td>
</tr>
<tr>
<td>Standard Value:</td>
<td>425 ft</td>
</tr>
<tr>
<td>Existing Value:</td>
<td>140 ft min.</td>
</tr>
<tr>
<td>Proposed Value:</td>
<td>140 ft min.</td>
</tr>
</tbody>
</table>

2. **Accident Analysis**

<table>
<thead>
<tr>
<th>Current Accident Rate:</th>
<th>acc/mvm or acc/mev (1.43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide Accident Rate:</td>
<td>acc/mvm or acc/mev (1.12)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is the NSF a contributing feature to identified accidents?</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose YES or NO</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

If YES, describe how the feature contributes to accidents

Based on accident analysis, stopping sight distance is not a contributing factor to the accident rate at this location.

3. **Cost Estimates**

| Cost to Fully Meet Standards: | $16.4 m + ROW impacts and corrections at adjacent facilities. |
| Cost(s) For Incremental Improvements: | |

4. **Measures to Mitigate the Potential Adverse Effects of the NSF**

ITS warning of slow and stopped traffic ahead could mitigate NSF by lowering operating speed and alerting motorists.

5. **Compatibility with Future Plans for Adjacent Segments**

The existing horizontal stopping sight distance is compatible with the posted speed limits of the adjacent segments of highway.

6. **Social, Economic & Environmental factors that weigh in the decision to retain or propose the NSF**

Additional Right-of-Way could be required to correct the horizontal stopping sight distance. Revising the ramp width and vertical and horizontal alignments to correct the horizontal stopping sight distance would affect adjacent highway facilities.

7. **Recommendation**

Existing horizontal stopping sight distance should be retained.

**NOTES:**

1. Use accidents per million vehicle miles (acc/mvm) for linear highway segments; use accidents per million entering vehicles (acc/mev) for intersections.
### Nonstandard Feature Justification

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X720.31</th>
<th>Route No. &amp; Name:</th>
<th>Ramp from RFK Bridge to Northbound I-87 Major Deegan Expwy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type:</td>
<td>Bridge Deck Replacement</td>
<td>Design Classification:</td>
<td>Interstate (Ramp)</td>
</tr>
<tr>
<td>ADT (Design Year):</td>
<td>27,580</td>
<td>Design Speed:</td>
<td>50 mph</td>
</tr>
<tr>
<td>DHV (Design Year):</td>
<td>2,206</td>
<td>% Trucks:</td>
<td>9%</td>
</tr>
</tbody>
</table>

#### 1. Description of Nonstandard Feature

<table>
<thead>
<tr>
<th>Type of Feature (e.g., horizontal curve radius):</th>
<th>Vertical Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Ramp from RFK Bridge to Major Deegan Expwy</td>
</tr>
<tr>
<td>Standard Value:</td>
<td>16 ft min.</td>
</tr>
<tr>
<td>Existing Value:</td>
<td>15'-0&quot;</td>
</tr>
<tr>
<td>Proposed Value:</td>
<td>15'-0&quot;</td>
</tr>
</tbody>
</table>

#### 2. Accident Analysis

<table>
<thead>
<tr>
<th>Current Accident Rate:</th>
<th>acc/mvm or acc/mev (1.43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide Accident Rate:</td>
<td>acc/mvm or acc/mev (1.12)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is the NSF a contributing feature to identified accidents?</th>
<th>YES □ NO ☒</th>
</tr>
</thead>
<tbody>
<tr>
<td>If YES, describe how the feature contributes to accidents</td>
<td>Based on accident analysis, vertical clearance (above traveled way) is not a contributing factor to the accident rate at this location.</td>
</tr>
</tbody>
</table>

#### 3. Cost Estimates

- Cost to Fully Meet Standards: $16.4 m
- Cost(s) For Incremental Improvements: $16.4 m

#### 4. Measures to Mitigate the Potential Adverse Effects of the NSF (e.g., curve warning signs for a non-standard horizontal curve; ITS for non-standard LOS, etc.)

- Posted Clearance signs at nonstandard crossings will mitigate oversized vehicles.

#### 5. Compatibility with Future Plans for Adjacent Segments

- The existing vertical clearance is consistent with the adjacent segments of highway.

#### 6. Social, Economic & Environmental factors that weigh in the decision to retain or propose the NSF

- Revising the vertical alignments to correct the vertical clearances would affect adjacent properties and highway segments.

#### 7. Recommendation

- It is recommended to retain this nonstandard feature.

### NOTES:

1. Use accidents per million vehicle miles (acc/mvm) for linear highway segments; use accidents per million entering vehicles (acc/mev) for intersections.
Highway Design Requirements
### Exhibit 2.3.3.2.a
Critical Design Elements for I-278/Bruckner Expressway

<table>
<thead>
<tr>
<th>PIN:</th>
<th>X731.45</th>
<th>NHS (Y/N):</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route No. &amp; Name:</td>
<td>I-278/Bruckner Expressway (Mainline)</td>
<td>Functional Classification:</td>
<td>Urban Principal Arterial Interstate</td>
</tr>
<tr>
<td>Project Type:</td>
<td>Reconstruction</td>
<td>Design Classification:</td>
<td>Interstate</td>
</tr>
<tr>
<td>% Trucks:</td>
<td>12%</td>
<td>Terrain:</td>
<td>Level</td>
</tr>
<tr>
<td>ADT:</td>
<td>141,400</td>
<td>Truck Access/Qualifying Hwy.: Access-Yes; Qualifying-No</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>HDM Reference</th>
<th>Standard</th>
<th>Existing Condition</th>
<th>Proposed Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design Speed</td>
<td>HDM Section 2.7.1.1 A</td>
<td>65 mph(^1)</td>
<td>65 mph</td>
<td>65 mph</td>
</tr>
<tr>
<td>2 Lane Width</td>
<td>One Lane=</td>
<td>12 ft. Min.</td>
<td>12 ft. Min.</td>
<td>12 ft. Min. (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>Two Lanes=</td>
<td>HDM Section 2.7.1.1 B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Shoulder Width</td>
<td>Left=</td>
<td>4 ft. Min.</td>
<td>4 ft. Min.</td>
<td>4 ft. Min. 3'-5'' Min.* (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>Right=</td>
<td>HDM Section 2.7.1.1 C</td>
<td>10 ft. Min.</td>
<td>10 ft. Min.</td>
</tr>
<tr>
<td></td>
<td>Exhibit 2-2 and Bridge Manual Section 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Bridge Roadway Width</td>
<td>HDM Section 2.7.1.1 D</td>
<td>Full Approach Width</td>
<td>Full Approach Width</td>
<td>Full Approach Width (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>and Bridge Manual Section 2.3.1 Table 2-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Maximum Grade</td>
<td>HDM Section 2.7.1.1 E</td>
<td>3%</td>
<td>1.8%</td>
<td>1.8% (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>Exhibit 2-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Horizontal Curvature</td>
<td>HDM Section 2.7.1.1 F</td>
<td>1660 ft. Min.</td>
<td>4,000 ft.</td>
<td>4,000 ft. (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>Exhibit 2-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Superelevation Rate</td>
<td>HDM Section 2.7.1.1 G</td>
<td>6% Max.</td>
<td>6.25% Max.*</td>
<td>6.0% Max.</td>
</tr>
<tr>
<td>8 Stopping Sight Distance</td>
<td>HDM Section 2.7.1.1 H</td>
<td>645 ft. Min.</td>
<td>574 ft. Min.* (Vertical)</td>
<td>574 ft. Min.* (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>Exhibit 2-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Horizontal Clearance</td>
<td>HDM Section 2.7.1.1 I</td>
<td>15 ft. Min.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Without Barrier=</td>
<td>4 ft. or Full Shoulder width, whichever is greater</td>
<td>3 ft. 5 in. Min.* (Retain Existing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>With Barrier=</td>
<td>HDM Section 2.7.1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Vertical Clearance (above traveled way)</td>
<td>Bridge Manual Section 2.4</td>
<td>16 ft. Min.</td>
<td>&gt; 16 ft.</td>
<td>&gt; 16 ft. (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>Table 2-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Travel Lane Cross Slope</td>
<td>HDM Section 2.7.1.1 J</td>
<td>1.5% Min. to 2% Max.</td>
<td>1.5% to 2%</td>
<td>1.5% to 2% (Retain Existing)</td>
</tr>
<tr>
<td>12 Rollover</td>
<td>HDM Section 2.7.1.1 L</td>
<td>4% Max.</td>
<td>3.5% Max. 4% Max.</td>
<td>3.5% Max. 4% Max (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>Between Travel Lanes=</td>
<td>8% Max.</td>
<td>4% Max.</td>
<td>4% Max. (Retain Existing)</td>
</tr>
<tr>
<td></td>
<td>At Edge of Travelled Way=</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Structural Capacity</td>
<td>Bridge Manual Section 2.6.2</td>
<td>HS 20 Live Load</td>
<td>HS 20 Live Load</td>
<td>HS 25 Live Load (Deck)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HS 20 Live Load (Other Elements)</td>
</tr>
<tr>
<td>14 Level of Service</td>
<td>HDM-Section 2.7.1.1 N</td>
<td>D</td>
<td>D</td>
<td>F*</td>
</tr>
<tr>
<td></td>
<td>(Heavily Developed Metro)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Control of Access</td>
<td>HDM-Section 2.7.1.1 O</td>
<td>Full</td>
<td>Full</td>
<td>Full</td>
</tr>
</tbody>
</table>

\(^1\) The Regional Traffic Engineer has concurred that the use of a Design Speed of 65 mph is consistent with the anticipated off-peak 85th percentile speed within the range of functional class speeds for the terrain and volume. *Denotes non-standard feature.
### Exhibit 2.3.3.2.b
Critical Design Elements for I-278/Bruckner Expressway Ramps

<table>
<thead>
<tr>
<th>Element</th>
<th>HDM Reference</th>
<th>Standard</th>
<th>Existing Condition</th>
<th>Proposed Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design Speed</td>
<td>HDM Section 2.7.5.2 A</td>
<td>50 mph</td>
<td>50 mph</td>
<td>50 mph</td>
</tr>
<tr>
<td>2 Traveled Way Width</td>
<td>HDM Section 2.7.5.2 B Exhibit 2-9a</td>
<td>23 ft. 32 ft.</td>
<td>N/A 36'-4&quot; Min.</td>
<td>N/A 37'-6&quot; Min.</td>
</tr>
<tr>
<td>3 Shoulder Width</td>
<td>HDM Section 2.7.5.2 C Exhibit 2-10</td>
<td>0 ft. Min, 2 ft. Des 0 ft. Min, 2 ft. Des</td>
<td>1'-11&quot; Min. 1'-11&quot; Min.</td>
<td>2'-6&quot; Min. 2'-6&quot; Min.</td>
</tr>
<tr>
<td>4 Bridge Roadway Width</td>
<td>HDM Section 2.7.5.2 D Full Approach Width</td>
<td>Full Approach Width</td>
<td>Full Approach Width</td>
<td>(Retain Existing)</td>
</tr>
<tr>
<td>5 Maximum Grade</td>
<td>HDM Section 2.7.5.2 E Exhibit 2-10</td>
<td>5%</td>
<td>4.8%</td>
<td>4.8% (Retain Existing)</td>
</tr>
<tr>
<td>6 Horizontal Curvature</td>
<td>HDM Section 2.7.5.2 F Exhibit 2-10</td>
<td>833 ft. Min.</td>
<td>292 ft. Min.*</td>
<td>292 ft. Min.* (Retain Existing)</td>
</tr>
<tr>
<td>7 Superelevation Rate</td>
<td>HDM Section 2.7.5.2 G</td>
<td>6% Max.</td>
<td>5.2% Max.</td>
<td>5.2% Max. (Retain Existing)</td>
</tr>
<tr>
<td>8 Stopping Sight Distance</td>
<td>HDM Section 2.7.5.2 H Exhibit 2-10</td>
<td>425 ft. Min.</td>
<td>238 ft. Min * (Vertical)</td>
<td>238 ft. Min* (Retain Existing)</td>
</tr>
<tr>
<td>9 Horizontal Clearance</td>
<td>HDM Section 2.7.5.2 I</td>
<td>3 ft. Min. 6 ft. Min. 4 ft. beyond outside shoulders to pier or abutment</td>
<td>1'-11&quot; Min.* 1'-11&quot; Min.* 4 ft. beyond outside shoulders to pier or abutment</td>
<td>2'-6&quot; Min.* 2'-6&quot; Min.* 4 ft. beyond outside shoulders to pier or abutment</td>
</tr>
<tr>
<td>10 Vertical Clearance (above traveled way)</td>
<td>Bridge Manual Section 2.4 Table 2-2</td>
<td>16' ft. Min 16'-6&quot; ft. Desirable</td>
<td>14 ft. 6 in.*</td>
<td>14 ft. 6 in.* (Retain Existing)</td>
</tr>
<tr>
<td>11 Travel Lane Cross Slope</td>
<td>HDM Section 2.7.5.2 K</td>
<td>1.5% Min. to 2% Max.</td>
<td>1.5% to 2%</td>
<td>1.5% to 2% Max. (Retain Existing)</td>
</tr>
<tr>
<td>12 Rollover Between Travel Lanes= At Edge of Travelled Way=</td>
<td>HDM Section 2.7.5.2 L</td>
<td>4% Max. 8% Max.</td>
<td>4% Max. 8% Max.</td>
<td>4% Max. 8% Max. (Retain Existing)</td>
</tr>
<tr>
<td>13 Structural Capacity</td>
<td>Bridge Manual Section 2.6.2</td>
<td>HS 20 Live Load</td>
<td>HS 20 Live Load</td>
<td>HS 25 Live Load (Deck) HS 20 Live Load (Other Elements)</td>
</tr>
<tr>
<td>14 Level of Service</td>
<td>HDM Section 2.7.5.2 N (Heavily Developed Metro)</td>
<td>D</td>
<td>F*</td>
<td>F*</td>
</tr>
</tbody>
</table>

(1) The Regional Traffic Engineer has concurred that the use of a Design Speed of 50 mph is consistent with the anticipated off-peak 85th percentile speed within the range of functional class speeds for the terrain and volume. *Denotes non-standard feature.
### Exhibit 2.3.3.2.c
Critical Design Elements for I-278/Bruckner Expressway Ramps

<table>
<thead>
<tr>
<th>Element</th>
<th>HDM Reference</th>
<th>Standard</th>
<th>Existing Condition</th>
<th>Proposed Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design Speed</td>
<td>HDM Section 2.7.5.2 A</td>
<td>40 mph¹</td>
<td>40 mph</td>
<td>40 mph</td>
</tr>
<tr>
<td>2 Traveled Way Width</td>
<td>HDM Section 2.7.5.2 B Exhibit 2-9a</td>
<td>17 ft. 28 ft.</td>
<td>19'-10'' N/A</td>
<td>20 ft. N/A</td>
</tr>
<tr>
<td>3 Shoulder Width</td>
<td>HDM Section 2.7.5.2 C Exhibit 2-10</td>
<td>2 ft. Min. 2 ft. Min.</td>
<td>1'-5'' Min. 1'-5'' Min.</td>
<td>2 ft. Min. 2 ft. Min.</td>
</tr>
<tr>
<td>4 Bridge Roadway Width</td>
<td>HDM Section 2.7.5.2 D</td>
<td>Full Approach Width</td>
<td>Full Approach Width</td>
<td>Full Approach Width</td>
</tr>
<tr>
<td>5 Maximum Grade</td>
<td>HDM Section 2.7.5.2 E Exhibit 2-10</td>
<td>6%</td>
<td>6.87%*</td>
<td>6.87%* (Retain Existing)</td>
</tr>
<tr>
<td>6 Horizontal Curvature</td>
<td>HDM Section 2.7.5.2 F Exhibit 2-10</td>
<td>485 ft. Min. R&gt;1,000 ft.</td>
<td>R&gt;1,000 ft.</td>
<td>R=1,000 ft. (Retain Existing)</td>
</tr>
<tr>
<td>7 Superelevation Rate</td>
<td>HDM Section 2.7.5.2 G</td>
<td>6% Max.</td>
<td>2.0% Max.</td>
<td>2.0% Max. (Retain Existing)</td>
</tr>
<tr>
<td>8 Stopping Sight Distance</td>
<td>HDM Section 2.7.5.2 H Exhibit 2-10</td>
<td>305 ft. Min.</td>
<td>251 ft. Min.* (Vertical)</td>
<td>251 ft. Min.* (Retain Existing)</td>
</tr>
<tr>
<td>9 Horizontal Clearance</td>
<td>HDM Section 2.7.5.2 I</td>
<td>3 ft. Min. 6 ft. Min. 4 ft. beyond outside shoulders to pier or abutment</td>
<td>1'-5'' Min.* 1'-5'' Min.*</td>
<td>2 ft. Min.* 2 ft. Min.*</td>
</tr>
<tr>
<td>10 Vertical Clearance (above traveled way)</td>
<td>Bridge Manual Section 2.4 Table 2-2</td>
<td>16' ft. Min 16'-6'' ft Desirable</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>11 Travel Lane Cross Slope</td>
<td>HDM Section 2.7.5.2 K</td>
<td>1.5% Min. to 2% Max.</td>
<td>1.5% to 2%</td>
<td>1.5% Min. to 2% Max. (Retain Existing)</td>
</tr>
<tr>
<td>12 Rollover Between Travel Lanes= At Edge of Travelled Way=</td>
<td>HDM Section 2.7.5.2 L</td>
<td>4% Max. 8% Max.</td>
<td>0% 0%</td>
<td>0% 0%</td>
</tr>
<tr>
<td>13 Structural Capacity</td>
<td>Bridge Manual Section 2.6.2</td>
<td>HS 20 Live Load</td>
<td>HS 20 Live Load</td>
<td>HS 25 Live Load (Deck) HS 20 Live Load (Other Elements)</td>
</tr>
<tr>
<td>14 Level of Service</td>
<td>HDM Section 2.7.5.2 N (Heavily Developed Metro)</td>
<td>D</td>
<td>F*</td>
<td>F*</td>
</tr>
</tbody>
</table>

(1) The Regional Traffic Engineer has concurred that the use of a Design Speed of 40 mph is consistent with the anticipated off-peak 85th percentile speed within the range of functional class speeds for the terrain and volume.

*Denotes non-standard feature.
### C. DESIGN CRITERIA

**Functional Classification:**
- Turning Roadway
- Interstate Ramp

**NHS:** Yes

**Truck Access/Qualifying Highway:**
- Access: Yes
- Qualifying: No Exist.

**AADT:** 25744

**% Trucks:** 9%

<table>
<thead>
<tr>
<th>Element</th>
<th>Standard / Reference</th>
<th>Existing Condition</th>
<th>Proposed Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Speed</td>
<td>50 mph</td>
<td>50 mph</td>
<td>50 mph</td>
</tr>
<tr>
<td>Lane Width</td>
<td>one-lane operation: 16 ft. min. on a curve, 12 ft. min. on a tangent; two-lane operation: 28 ft. min. on a curve, 24 ft. min. on a tangent</td>
<td>two-lane operation: 28 ft. on a curve, 24 ft. on a tangent</td>
<td>two-lane operation: 28 ft. on a curve, 24 ft. on a tangent</td>
</tr>
<tr>
<td>Shoulder Width Left</td>
<td>0 ft. Min, 2 ft. Desired (HDM Section 2.7.5.2 C)</td>
<td>10’ minimum</td>
<td>2’ minimum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Right</th>
<th>0 ft. Min, 2 ft. Desired (Exhibit 2-10)</th>
<th>0’</th>
<th>2’ minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge Roadway Width</td>
<td>Full approach roadway width</td>
<td>Full approach roadway width</td>
<td>Full Approach Width (Retain Existing)</td>
<td>3.8% (Retain Existing)</td>
</tr>
<tr>
<td>Maximum Grade</td>
<td>5%</td>
<td>3.8%</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Horizontal Curvature</td>
<td>833 ft. min. @ e.m=6%</td>
<td>250 ft. min.*</td>
<td>250 ft. min. *</td>
<td>(Retain Existing)</td>
</tr>
<tr>
<td>Superelevation Rate</td>
<td>6% max.</td>
<td>6% max.</td>
<td>6% max.</td>
<td>(Retain Existing)</td>
</tr>
<tr>
<td>Vertical Stopping Sight Distance</td>
<td>425 ft. min.</td>
<td>282 ft. min. *</td>
<td>282 ft. min. *</td>
<td>(Retain Existing)</td>
</tr>
<tr>
<td>Horizontal Stopping Sight Distance</td>
<td>425 ft. min.</td>
<td>140 ft. min. *</td>
<td>140 ft. min. *</td>
<td>(Retain Existing)</td>
</tr>
<tr>
<td>Horizontal Clearance</td>
<td>right side: greater of shoulder width or 6 ft. left side: 3 ft. min.</td>
<td>right side: 12 ft. min left side: 3 ft.</td>
<td>right side: 12 ft. min left side: 3 ft. (Retain Existing)</td>
<td></td>
</tr>
<tr>
<td>Vertical Clearance</td>
<td>16 ft. min. / 18'-6” desirable</td>
<td>15'-0” *</td>
<td>15'-0” * (Retain Existing)</td>
<td></td>
</tr>
<tr>
<td>Pavement Cross Slope</td>
<td>1.5% min. to 2% max.</td>
<td>1.5% min. to 2% max.</td>
<td>1.5% min. to 2% max. (Retain Existing)</td>
<td></td>
</tr>
<tr>
<td>Rollover</td>
<td>4% max. between travel lanes; 8% max. at EOTW</td>
<td>4% max. between travel lanes; 8% max. at EOTW</td>
<td>4% max. between travel lanes; 8% max. at EOTW</td>
<td></td>
</tr>
<tr>
<td>Structural Capacity</td>
<td>HS 20 Live Load</td>
<td>HS 20 Live Load</td>
<td>HS 25 Live Load for Deck/HS 20 for Other Elements</td>
<td></td>
</tr>
<tr>
<td>Level of Service (interstate)</td>
<td>Minimum D (heavy development)</td>
<td>D</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Control of Access (interstate)</td>
<td>Fully controlled</td>
<td>Fully controlled</td>
<td>Fully controlled</td>
<td></td>
</tr>
<tr>
<td>Pedestrian Accommodations</td>
<td>Complies with HDM Chapter 18</td>
<td>Pedestrians are not allowed on the ramp</td>
<td>Pedestrians are not allowed on the ramp</td>
<td></td>
</tr>
<tr>
<td>Median Width</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td></td>
</tr>
<tr>
<td>American with Disabilities Act (ADA) Compliance</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td></td>
</tr>
</tbody>
</table>

The Regional Traffic Engineer has concurred that the use of a Design Speed of 50 mph is consistent with the anticipated off-peak 85th percentile speed within the range of functional class speeds for the terrain and volume.

*Denotes non-standard feature
INDEX

I. REVISIONS PAGE 2
II. GENERAL PAGE 3
III. HOUSING PAGE 3
IV. MOUNTING HARDWARE PAGE 4
V. LENSES PAGE 4
VI. CASTINGS, HARDWARE & PAINTING PAGE 4
VII. ELECTRICAL COMPONENTS PAGE 4
VIII. PHOTOMETRIC REQUIREMENTS PAGE 5
IX. SAMPLES PAGE 5
X. CHANGES PAGE 5
XI. GUARANTEE PAGE 6
XII. DELIVERIES PAGE 6
XIII. DELIVERY SCHEDULE PAGE 6
XIV. IDENTIFICATION NUMBERS PAGE 6
XV. IDENTIFICATION OF WATTAGE PAGE 6
XVI. PACKING PAGE 7
## I. REVISIONS

<table>
<thead>
<tr>
<th>REV</th>
<th>DESCRIPTION</th>
<th>DATE</th>
<th>APP'D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Changes in Section II, VII, VIII</td>
<td>9/16/13</td>
<td>MR</td>
</tr>
<tr>
<td>2</td>
<td>Changes in Section II, VII, VIII</td>
<td>12/8/15</td>
<td>MR</td>
</tr>
<tr>
<td>3</td>
<td>Changes in Sections VII, VIII</td>
<td>8/16/16</td>
<td>MR</td>
</tr>
</tbody>
</table>
II. **GENERAL**

The luminaire shall be of Lighting Emitting Diode (LED) type designed for underdeck mounting. The luminaire shall be UL listed and IP 66 classified enclosure also has to pass 3G vibration test. The enclosure shall be cast aluminum with integral weather tight LED driver compartments and high performance passive, not active (no fans, pumps or liquids) heat sinks specifically designed for LED lighting applications.

The luminaire shall be 105 Watt maximum, 140 Watt maximum or 55 Watt maximum for narrow underpasses, equipped with a built-in power driver, and shall be designed for operation on a 120 volt, 60 Hz and shall operate normally in temperatures from -20 degrees Celsius to 50 degrees Celsius.

The luminaire shall consist of housing with electrical components and an optical system.

The luminaire shall provide efficient even illumination, be optically sealed, mechanically strong, and easy to maintain. The driver components shall be mounted in a structurally sound manner within the housing of the luminaire, with provision made for optimum heat dissipation. The terminal board, fuse, and driver components shall be readily accessible, and the optical assembly shall be sealed against the entry of moisture, dirt, and insects.

The luminaire shall withstand severe outdoor conditions due to seasonal changes in temperature and shall be structurally capable of operating satisfactorily in winds of 80 miles per hour with 50% gust.

The wiring of the luminaire to the primary circuit shall be done at the terminal board in the power driver compartments. Housing shall be provided with an entry to securely connect 3/4" conduit.

The whole luminaire assembly shall be completely prewired, requiring only the connection of the primary circuit wires for its operation.

Hereafter in these specifications the expression "Subject to Approval" shall mean "Subject to Approval of Director, Division of Street lighting".

Any material may be substituted for a material specified herein provided that the substitute material is equal to or better than the material specified herein subject to approval.

All equipment shall be as specified herein or approved equal.

III. **HOUSING**

The luminaire housing shall consist of cast aluminum. The housing shall support the power driver, fuse, terminal board and 3/4" conduit connection. The luminaire shall be slim, low profile and easy mounting on wall or ceiling, the luminaire dimensions shall be 18" X 18" X 6" approximately.

All materials inside the housing shall be corrosion resistant, and shall have a protective coating providing a corrosion resistant finish. Metals in contact shall be compatible to prevent corrosion due to contact of dissimilar metals. The fastening arrangement shall be of corrosion resistant material, shall be such as to prevent relative motion between fastener members, and shall permit easy opening and closing of the power driver compartment assembly with snap action. A means shall be provided to prevent accidental opening of the fastening arrangement.

Upon closure, the hinge arrangement shall produce a lifting action to adequately seat the sealing gasket.

The fastening arrangement shall be simple but positive in the operation of keeping the power driver compartment assembly in closed position.
IV. MOUNTING HARDWARE

The mounting hardware required for attaching the luminaire to the underdeck structure or wall and for adjusting the luminaire about its longitudinal axis through an angle of (30 – 60) from horizontal, shall be furnished with the luminaire. Mounting hardware shall permit luminaire to be attached directly to underdeck or wall or suspended by rods from the ceiling. The mounting hardware, which shall include special bolts, nuts, washers, clamps channels, etc., where required, shall be corrosion resistant. The hardware shall assure rigid mounting, shall prevent rotation of the luminaire when attached, and shall be capable of adequately supporting the luminaire in winds of 80 miles per hour with 50% gust.

Suspension rods, girder clips, concrete inserts, anchors and expansion shields are not to be supplied with the luminaire.

V. LENSES

Each LED shall have a lens that will direct the output light in a way that the luminaire shall give the light distribution and luminaire efficiency as described under “PHOTOMETRIC REQUIREMENTS”. Lenses shall be of a material that will not attract dirt, withstand outdoor weather and ultra-violet stabilized with smooth outside surface. Lenses shall be completely sealed and shall be moisture proof and dirt proof.

VI. CASTINGS, HARDWARE, AND PAINTING

Castings may be die castings, permanent mold castings, or sand castings.

The aluminum die castings for luminaire components shall meet the provisions of the A.S.T.M. Specifications, Designation B85, alloy composition SG-1 00-B, Alcoa Alloy designation A-380-F, or equal.

The aluminum permanent mold castings for luminaire components shall be Alcoa Alloy designation A-132, A-356-T-6, or equal.

The aluminum sand castings for luminaire components shall be Alcoa Alloy designation A-356-T-6, 319, or equal.

Castings shall be clean and free from injurious defects and shall be painted on external surfaces as follows:

A coat of baked on epoxy base enamel, lacquer base enamel, alkyd enamel, or equal, shall be applied to give the castings an aluminum grey colored protective finish with good metal adhesion, having abrasion, corrosion and weather resistance and leaving no exposed metal. Same protective finish shall be applied to external surfaces of aluminum housing.

All screws, washers, and nuts shall be stainless steel, or steel of a corrosion finish.

VII. ELECTRICAL COMPONENT

The electrical components in the luminaire shall include an electronic power driver, fuse holder with fuse, 10 KA surge protection device, and terminal board with pressure type terminals, all to be prewired and tested at the point of manufacture. The LED power driver shall be 120– 277 Volt, 50/60 HZ class 1 LED driver for luminaries more than100 Watt and class 2 driver for all luminaries less than 100 Watt, with power factor more than 90% and THD less than 20% of full load. Integral weather-tight electrical box for easy power hook-up. Voltage dips up to 20% below the nominal line volts of 120 shall not affect LED board power or cause luminaire to dim or fail.
The terminal board shall be equipped with two (2) clamp-type pressure terminals for connection to the phase leg and neutral of the primary circuit. The terminals shall be properly identified for connection, with notations on terminal board, color coding, or wiring diagram.

The whole luminaire assembly shall be completely prewired requiring only the connection of the primary circuit wires for its operation.

Wiring shall be #16 stranded wires, with silicone rubber insulation, fiberglass sheath and lacquer finish, or cross-linked polyethylene insulation of 105°Celsius rating.

VIII. PHOTOMETRIC REQUIREMENTS

The luminaire shall have a total delivered light efficiency of not less than 90% of initial delivered lumens at 25000 hours of life of LEDs, and 70% of initial delivered lumens at 50000 hours of life of LEDs, measurements shall be done at 25 degrees Celsius.

Luminaire initial delivered lumens at 25 degree Celsius shall be 7680 minimum for 105 Watt, 8950 minimum for 140 Watt and 4850 minimum for 55 Watt, with color temperature 3000 (+/- 200) degrees Kelvin. Color Rendering Index shall be more than 71% (CRI > 71%) at 25 degree Centigrade.

Luminaire shall be cutoff with no significant glare (G2 maximum for high wattage and G1 for low wattage), and IES classifications, type II or type I for wall mounting and type V for ceiling pendant mounting. Longitudinal classification shall be short.

The successful bidder shall submit for approval to the Director and Division of Street Lighting certified photometric test data report, giving the light distribution pattern, the luminaire efficiency and measurements as per IES- LM- 79-08. The test report shall certify that the luminaire comply with the photometric requirements, and include the performance data of luminaire with time and the junction temperature. UL certification, IP 66 certification and 3G vibration certification shall be submitted.

All tests shall be performed by an independent and recognized testing laboratory.

IX. SAMPLE

Low bidder shall submit a sample prior to award together with all certification tests within 30 consecutive calendar days after bid opening.

The City of New York reserves the right to require all bidders to submit a sample within 30 days after notice.

Additional time for submission of sample may be granted only by written application to the Director of the Division of Street Lighting.

When the sample is ready the bidder shall notify the Division of Street Lighting, Bureau of Traffic, 34-02 Queens Blvd., Long Island City, New York 11101.

The City reserves the right to waive submission of sample. If sample is required, no award will be made until written approval of sample by the Division of Municipal Supplies, Bureau of Quality Assurance has been given.

X. CHANGES

After written approval, any change in material, parts, method of manufacture, or processing, whether by contractor or by a sub-contractor, shall be subject to approval prior to
proceeding with the change.

XI. GUARANTEE

The vendor shall guarantee the entire luminaire against defects of materials and parts, workmanship, and failure to operate properly in service for a period of seven (7) years after date of final delivery or seven (7) years after being placed in service, whichever occurs first. Guarantee shall cover operation of luminaire, luminaire shall be considered defective if any part of the luminaire fail, power driver is not performing correctly, lighting output has decreased by 30% of the initial delivered lumens, or lighting color has changed to outside the specified range.

XII. DELIVERIES

Delivery points are suitable for truck delivery only. Sufficient help, material, and equipment must by the vendor to safely unload and stack shipments to the satisfaction of the representative of the Division of Street Lighting. Pick-ups and deliveries will be permitted between the hours of 10:00 a.m. and 2:00 p.m., Monday through Friday, except holidays.

Note: There is no platform service at delivery points.

If within the period of the contract the Division of Street Lighting wishes to change the delivery point to any destination within the City limits, they may do so upon written notice to the Contractor and the Division of Street Lighting. Delivery point shall be Storeroom at 45-03 37th Avenue, Long Island City, New York, New York 11105.

Defective units shall be picked up from the Division of Street Lighting storeroom at 45-03 37th Avenue, Long Island City, New York, New York 11105 and when repaired shall be returned f.o.b. to the same storeroom or as directed by the Director.

Appointments for receipt of deliveries must be made at least 24 hours in advance. Telephone (718) 361-8088, Attention: - Person-in-charge at storeroom.

XIII. DELIVERY SCHEDULE

Deliveries - Delivery of the units on order shall be made as follows:

Contractor shall make an initial shipment of 30% of number of units on order within 45 consecutive calendar days after award. Subsequent shipments shall be made at the rate of 35% of number of units on order within every 30 consecutive calendars day period until the entire order is completed.

XIV. IDENTIFICATION NUMBERS

The inscription “Property of New York City” shall appear on the inside of the housing for the luminaries in a convenient location in letters approximately 1/2 inch high, also it shall have the manufacture name and date of manufactured.

XV. IDENTIFICATION OF WATTAGE AND LABELING

On the housing of the luminaire there shall be an identification means permanently attached to allow for identification of the wattage. The means shall be visible to an observer standing at street level under the installed luminaire and shall be subject to approval at the time the sample is submitted.

Identification means shall consist of a black number on a white colored square.
Anatomy of the Facts Label:

Label shall be included in the fixture; it shall have light output lumens, watts, lumens/watt (Efficacy), color rendering index (CRI), correlated color temperature (CCT) and IESNA LM-79-2008.

XVI. PACKING

Packing shall be standard commercial unless otherwise stated in the schedule; uniform packing shall be maintained for each delivery. Every carton or package shall be labeled on the narrow side with the quantity, unit, description, vendor, name, commodity code, shipping instructions, order, and contract number.

Contract Vendor Packing List must accompany delivery and must be attached to Bill of Lading and not attached to carton or inserted therein.

Separate packing list for each individual shipping instruction or order is a must. Do not consolidate on one (1) packing list.

Luminaries shall be packed one (1) each, with refractor, in a cardboard carton.

NO FURTHER TEXT
CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
CHIEF TRANSPORTATION OFFICER
TRAFFIC ENGINEERING SECTION
DIVISION OF STREET LIGHTING

SPECIFICATIONS NO. 466

SPECIFICATIONS FOR

LED ROADWAY LUMINAIRE

MARCH 12, 2012

INDEX

I. REVISIONS PAGE 2
II. GENERAL PAGE 3
III. HOUSING PAGE 3
IV. LENSES PAGE 4
V. CASTINGS, HARDWARE & PAINTING PAGE 4
VI. ELECTRICAL COMPONENTS PAGE 4
VII. PHOTOMETRIC REQUIREMENT PAGE 5
VIII. SAMPLES PAGE 6
IX. CHANGES PAGE 6
X. GUARANTEE PAGE 6
XI. DELIVERIES PAGE 6
XII. DELIVERY SCHEDULE PAGE 7
XIII. IDENTIFICATION OF WATTAGE PAGE 7
XIV. PACKING PAGE 8
### SPECIFICATIONS NO. 466

#### I. REVISIONS

<table>
<thead>
<tr>
<th>REV</th>
<th>DESCRIPTION</th>
<th>DATE</th>
<th>APP’D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CHANGES IN SECTIONS II, VI, VII, XIII</td>
<td>11/12/12</td>
<td>MR.</td>
</tr>
<tr>
<td>2</td>
<td>CHANGES IN SECTIONS II, VI, VII</td>
<td>10/2/13</td>
<td>MR.</td>
</tr>
<tr>
<td>3</td>
<td>CHANGES IN SECTIONS II, VI, VII</td>
<td>12/2/13</td>
<td>M.R.</td>
</tr>
<tr>
<td>4</td>
<td>CHANGES IN SECTIONS II, VI, VII, XIII</td>
<td>6/12/14</td>
<td>M.R.</td>
</tr>
<tr>
<td>5</td>
<td>CHANGES IN SECTIONS II, III, VI, X</td>
<td>03/30/15</td>
<td>G.P.</td>
</tr>
<tr>
<td>6</td>
<td>CHANGES IN SECTIONS II, VII</td>
<td>12/16/15</td>
<td>MR</td>
</tr>
<tr>
<td>7</td>
<td>CHANGES IN SECTIONS VII (Color Temp. 3000K)</td>
<td>07/21/16</td>
<td>MR</td>
</tr>
</tbody>
</table>
II. GENERAL

The luminaire shall be of Lighting Emitting Diode (LED) type designed for roadways, pole mounting. The luminaire shall be UL listed for wet locations, and the optic enclosure shall be IP66 classified. The enclosure shall be cast aluminum with integral weather tight dimmable LED power driver compartments and high performance passive, not active (no fans, pumps or liquids) heat sinks specifically designed for LED lighting applications.

The luminaire shall be 110 watt, 78 watt or 40 watt maximum and shall be equipped with a built-in dimmable LED power driver, and LOW VOLTAGE indicator lamp (if required by Street Lighting). Luminaire shall operate on a 120 volt, 60 Hz, and shall operate normally in temperatures from -20 degrees Celsius to 50 degrees Celsius.

The luminaire shall consist of housing with electrical components and an optical system. General shape and dimensions shall be as per standard drawing 5318.

The luminaire shall provide efficient even illumination, be optically sealed, mechanically strong, and easy to maintain. The driver, low voltage indicator and surge protector components shall be mounted in a structurally sound manner within the housing of the luminaire, with provision made for optimum heat dissipation. The terminal board, and driver components shall be readily accessible, and the optical assembly shall be sealed against the entry of moisture, dirt, and insects.

The luminaire shall withstand severe outdoor conditions due to seasonal changes in temperature and shall be structurally capable of operating satisfactorily in winds of 80 miles per hour with 50% gust.

The wiring of the luminaire to the primary circuit shall be done at the terminal board (4 screw terminal board) in the dimmable LED power driver compartments. Housing shall be provided with an entry to securely connect 3#12 cables to terminal board. Luminaire shall be mounted on an arm with clamps that shall accept 11/2" – 2" diameter arm, and 7 pin photo electric control cell receptacle, and dimmable LED power driver.

The whole luminaire assembly shall be completely prewired, requiring only the connection of the primary circuit wires for its operation.

Hereafter in these specifications the expression "Subject to Approval" shall mean "Subject to Approval of Director, Division of Street lighting".

Any material may be substituted for a material specified herein provided that the substitute material is equal to or better than the material specified herein subject to approval.

All equipment shall be as specified herein or approved equal.

III. HOUSING

The luminaire housing shall be cast aluminum. The housing shall support the dimmable LED power driver, terminal board, arm connection and optical system.

All materials inside the housing shall be corrosion resistant, and shall have a protective coating providing a corrosion resistant finish. Metals in contact shall be compatible to prevent corrosion due to contact of dissimilar metals. The fastening arrangement shall be of corrosion resistant material, shall be such as to prevent relative motion between fastener members, and shall permit easy opening and closing of the dimmable LED power driver compartment assembly with snap action. A means shall be provided to prevent accidental opening of the fastening arrangement.
Upon closure, the hinge arrangement shall produce a lifting action to adequately seat the sealing gasket.

IV. LENSES

LED shall have glass or acrylic lens that will direct the output light in a way that the luminaire shall give the light distribution and luminaire efficiency as described under "PHOTOMETRIC REQUIREMENTS". Lens shall be of a material that will not attract dirt, withstand outdoor weather and ultra-violet stabilized with smooth outside surface. Lenses shall be completely sealed and shall be moisture proof and dirt proof.

V. CASTINGS, HARDWARE, AND PAINTING

Castings may be die castings, permanent mold castings, or sand castings.

Castings shall be clean and free from injurious defects and shall be painted on external surface as follows:

A coat of baked on epoxy base enamel, lacquer base enamel, alkyd enamel, or equal, shall be applied to give the castings an aluminum grey colored protective finish with good metal adhesion, having abrasion, corrosion and weather resistance and leaving no exposed metal. Same protective finish shall be applied to external surfaces of aluminum housing.

All screws, washers, and nuts shall be stainless steel, or steel of a corrosion finish.

VI. ELECTRICAL COMPONENTS

The electrical components in the luminaire shall include an electronic dimmable LED power driver, 10 KA surge protection, low voltage indicator device and terminal board with pressure type terminals, all to be prewired and tested at the point of manufacture. The LED dimmable LED power driver shall be 120–277 Volt, 50/60 HZ class I for 110 watt luminaire or Class I or II for 78 watt luminaire, with power Factor more than 90% and THD less than 20% of full load. Integral weather-tight electrical box for easy power hook-up, dimmable LED power driver shall be IP65 rated minimum. Voltage dips up to 30% below the nominal line volts of 120 shall not affect LED board power or cause luminaire to dim or fail.

The terminal board shall be equipped with four (4) clamp-type pressure terminals for connection to the phase leg, neutral, ground of the primary circuit and a controlled phase connection for another luminaire. The terminals shall be properly identified for connection, with notations on terminal board, color coding, or wiring diagram.

The whole luminaire assembly shall be completely prewired requiring only the connection of the primary circuit wires for its operation.

Wiring shall be #16 stranded wires, with silicone rubber insulation, fiberglass sheath and lacquer finish, or cross-linked polyethylene insulation of 105º Centigrade rating.
LOW VOLTAGE INDICATOR LAMP

General Description

Power Quality problems have been found to be one of the underlying factors which contributes to stray voltage. The power quality issue is most often caused by corroded or severed connection points in the income power feed circuit. The indicator shall give a visible indication from street level of a low voltage condition.

It shall indicate in all lighting conditions that a difference in potential may exist between a street light pole and any other object that may be at lower impedance to ground (Neutral fault) or low voltage condition caused by low voltage feed from the utility company (brown out). The indicator shall detect any drop in line voltage to less than 100 volts. The unit shall operate with an input voltage from 105 volts AC to 125 volts AC 60 cycles. The unit shall flash the red LED when the voltage is less than 100 volt.

Construction

The unit shall be rated for use in an outdoor environment in prevalent weather conditions in NEW YORK CITY. The unit shall be housed inside of the street light fixture with only the LED indicator and mounting screws visible. The indicators shall be a long life RED LED(s) any steel parts shall be galvanized to prevent corrosion. The wire must be equal to wire rating used within the street light fixture. The inductor shall be supplied as part of the street lighting fixture except as otherwise stated in the procurement documentation.

Testing

The LED indicator shall illuminate when any or all of the following conditions exist;

1. The incoming utility neutral conductor is severed.
2. The incoming utility neutral conductor is defective causing a current flow to ground though the street light pole bond and voltage of less than 100 volts is present at the street light fixture.
3. The utility power has dropped below one hundred volts.

The test shall be demonstrated using the following examples. (All wire movement shall be done with power off. Special care must be taken since the testing will produce contact voltage at lethal levels.)

Bench testing

1. Using a variable voltage transformer the voltage should be set voltage at 120 volts ac with the street light under test at maximum current draw. Remove the neutral wire from the incoming power supply before the bond to the street light fixture. A load bank consisting of a lamp load equal to 420 watts ± 5 watts is placed in series with a low impedance ground and the bonding screw on the fixture. Measure voltage between low impedance ground and the street light head. It should be less than 100 volts. If not add more lamp load to get below 100 volts. If voltage is below 100 volts the power quality indicator should illuminate.

2. Using a variable voltage transformer the voltage should be set voltage at 120 volts ac with the street light under test at maximum current draw. The light should not be illuminated. The voltage shall be lower to less than 100 volts the LED power quality indicator shall be illuminated.

VII. PHOTOMETRIC REQUIREMENTS

The luminaire shall have a total delivered light efficiency of not less than 95% at mean life of LEDs, and 70% at 20 years, measurements shall be done at 25 degree Celsius. Luminaire shall deliver 8192 lumens minimum for 110 W luminaire, 6000 lumens minimum for 78 w and 3960 lumens minimum for 40 w luminaire, with efficacy not less than 75.
Color temperature range 3000(+200,-200) degrees Kelvin. Color Rendering Index shall be more than 71% (CRI > 71%) at 25 degree Centigrade. Luminaire shall be in compliance with LM 79-08.

Luminaire IES classification shall be type II or type III. Longitudinal classification shall be medium, cutoff classification, and BUG rating shall be B2 U1 G2 maximum for high wattage luminaries low wattage ones shall have B1 U1 G1 maximum.

The successful bidder shall submit for approval to the Director and Division of Street Lighting certified photometric test data report, giving the light distribution pattern, the luminaire efficiency and measurements as per IES- LM- 79-08. The test report shall certify that the luminaire comply with the photometric requirements, and include the performance data of luminaire with time and the junction temperature. UL certification, IP66 certification and 3G vibration certification shall be submitted.

All tests shall be performed by an independent and recognized testing laboratory.

VIII. SAMPLES

Low bidder shall submit a sample prior to award together with all certified test reports within 30 consecutive calendar days after bid opening.

The City of New York reserves the right to require all bidders to submit a sample within 30 days after notice.

Additional time for submission of sample may be granted only by written application to the Director of the Division of Street Lighting.

When the sample is ready the bidder shall notify the Division of Street Lighting, Bureau of Traffic, 34-02 Queens Blvd., Long Island City, New York 11101.

The City reserves the right to waive submission of sample. If sample is required, no award will be made until written approval of sample by the Division of Municipal Supplies, Bureau of Quality Assurance has been given.

IX. CHANGES

After written approval, any change in material, parts, method of manufacture, or processing, whether by contractor or by a sub-contractor, shall be subject to approval prior to proceeding with the change.

X. GUARANTEE

The vendor shall guarantee the entire luminaire against defects of materials and parts, workmanship, and failure to operate properly in service for a period of seven (7) years after date of final delivery or seven (7) years after being placed in service, whichever occurs first. Guarantee shall cover operation of luminaire, luminaire shall be defective if dimmable LED power driver is not performing correctly, lighting output has decreased by 30% of the initial lighting output of the fixture, or lighting color has changed to outside the specified range.
XI. DELIVERIES

Delivery points are suitable for truck delivery only. Sufficient help, material, and equipment must by the vendor to safely unload and stack shipments to the satisfaction of the representative of the Division of Street Lighting. Pick-ups and deliveries will be permitted between the hours of 10:00 a.m. and 2:00 p.m., Monday through Friday, except holidays.

Note: There is no platform service at delivery points.

If within the period of the contract the Division of Street Lighting wishes to change the delivery point to any destination within the City limits, they may do so upon written notice to the Contractor and the Division of Street Lighting. Delivery point shall be Storeroom at 45-03 37th Avenue, Long Island City, New York, New York 11105.

Defective units shall be picked up from the Division of Street Lighting storeroom at 45-03 37th Avenue, Long Island City, New York, New York 11105 and when repaired shall be returned f.o.b. to the same storeroom or as directed by the Director.

Appointments for receipt of deliveries must be made at least 24 hours in advance. Telephone (718) 361-8088, Attention: - Person-in-charge at storeroom.

XII. DELIVERY SCHEDULE

Deliveries - Delivery of the units on order shall be made as follows:

Contractor shall make an initial shipment of 30% of number of units on order within 45 consecutive calendar days after award. Subsequent shipments shall be made at the rate of 35% of number of units on order within every 30 consecutive calendars day period until the entire order is completed.

XIII. IDENTIFICATION OF WATTAGE AND LABELING

On the housing of the luminaire there shall be an identification means permanently attached to allow for identification of the wattage. The means shall conform to ANSI C136.15-2011, be visible to an observer standing at street level under the installed luminaire and shall be subject to approval at the time the sample is submitted.

Identification means shall consist of a black number on a white colored square as per IESNA standards.

Anatomy of the Facts Label:

Label shall be included in the fixture; it shall have light output lumens, watts, lumens/watt (Efficacy), color rendering index (CRI), correlated color temperature (CCT) and IESNA LM-79-2008.

The inscription "Property of New York City" shall appear on the inside of the housing for the luminaries in a convenient location in letters approximately 1/2 inch high, also it shall have the manufacture name and date of manufactured, a non-removable sticker or embossed can be used.
XIV. **PACKING**

Packing shall be standard commercial unless otherwise stated in the schedule; uniform packing shall be maintained for each delivery. Every carton or package shall be labeled on the narrow side with the quantity, unit, description, vendor, name, commodity code, shipping instructions, order, and contract number.

Contract Vendor Packing List must accompany delivery and must be attached to Bill of Lading and not attached to carton or inserted therein.

Separate packing list for each individual shipping instruction or order is a must. Do not consolidate on one (1) packing list.

Luminaries shall be packed one (1) each, with refractor, in a cardboard carton.
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D-2280</td>
</tr>
<tr>
<td>2</td>
<td>D-2280M Cast Iron Type Junction Box</td>
</tr>
<tr>
<td>3</td>
<td>D-3762 Standard Steel Anchor Bolt</td>
</tr>
<tr>
<td>4</td>
<td>D-3954 Modification of buried type concrete service box</td>
</tr>
<tr>
<td>5</td>
<td>D-5213 foundation on slab</td>
</tr>
<tr>
<td>6</td>
<td>E-3768 8' Steel Arm</td>
</tr>
<tr>
<td>7</td>
<td>E-3768M 8' Steel Arm</td>
</tr>
<tr>
<td>8</td>
<td>E-3788 Typical Foundation For Lamppost</td>
</tr>
<tr>
<td>9</td>
<td>H-3722 sh 5A of 8</td>
</tr>
<tr>
<td>10</td>
<td>H-3722-3A -Steel Transformer Base</td>
</tr>
<tr>
<td>11</td>
<td>H-3722-4A Std 25' Steel LP</td>
</tr>
<tr>
<td>12</td>
<td>H-3722M Steel Transformer Base- Round Corners</td>
</tr>
<tr>
<td>13</td>
<td>H-3722M Tapered Steel Octagonal Shaft Assemblies</td>
</tr>
<tr>
<td>14</td>
<td>H-5159 Shaft Extension for Traffic M-2 Post, Single &amp; Twin Types</td>
</tr>
<tr>
<td>15</td>
<td>H-5220 Concrete Barrier Lamppost Foundation</td>
</tr>
<tr>
<td>16</td>
<td>H-5220M Concrete Barrier Lamppost Foundation</td>
</tr>
<tr>
<td>17</td>
<td>H-5222A - 6 Relay Control Cabinet with 3 PEC's</td>
</tr>
<tr>
<td>18</td>
<td>J-3179-BM Roadway Type Concrete Box-With CI Fram &amp; DI Cover</td>
</tr>
<tr>
<td>19</td>
<td>J-3951 6 Ft Steel Arm</td>
</tr>
<tr>
<td>20</td>
<td>J-5226 Temp. Light Support</td>
</tr>
<tr>
<td>21</td>
<td>J-5240 In-Line Fuse Connection In Post On Highway-Street</td>
</tr>
<tr>
<td>22</td>
<td>J-5265 Expansion Deflection Fitting</td>
</tr>
<tr>
<td>23</td>
<td>J-5272 Steet Box Details</td>
</tr>
</tbody>
</table>
SLOTS FOR LIFTING COVER

- FOR SPACING SEE TABLE

RAISED LETTERS INTEGRAL WITH COVER, HIGH IN RECTANGULAR RECESS 8 DEEP

REMOVABLE FRAME FASTENED TO BOX WITH 4 X 20 MACH SCREWS 8 MAX SPACING

6 5/8 TAPPED HOLE FOR GROUND 5 3/4

THREADED DRAIN HOLE TO BE LOCATED IN LOW SIDE OR BOX

N.Y.C ELECTRICAL

NOTES:
2. BOX FRAME AND COVER SHALL BE HOT DIPPED GALvanized INSIDE & OUT.
3. BOX FRAME AND COVER SHALL BE NEATLY FINISHED, THE THICKNESSES AS GIVEN SHALL BE UNIFORM THROUGHOUT, ACCEPTANCE OF COMPLETE ASSEMBLY SHALL BE SUBJECT TO THE APPROVAL OF THE FIELD REPRESENTATIVE OF THIS DEPARTMENT.
4. ALL NUTS, BOLTS, SCREWS, ETC. SHALL BE STAINLESS STEEL.
5. FOR SIZE AND NO. OF CONDUITS ENTERING BOX SEE CONTRACT PLANS.
6. BOX COVER SHALL BE EQUAL TO THOSE MFGD. BY D.Z. ELEC. MFG CO., INC., SPRING CITY ELECT. MFG CO. OR DONNEL ELECT. MFG CO., INC.

DEPARTMENT OF PUBLIC WORKS
Bureau of Gas and Heating
Division of Engineering
Municipal Building, New York City

JUNCTION BOX

DRAWN BY R. PARRA
CHECKED BY J. BOLEY

J.S.B.

DATE 2-8-65
SCALE 1/8" = 1'-0"

D-2280

FLUSH WITH COVER.

HEX NO. CAP SCREW

REINFORCING 2/8

GRIND FIT

NEOPRENE GASKET SECURED WITH AN APPROVED RUBBER CEMENT
ROLLED THREAD MAY BE SUBSTITUTED FOR CUT THREAD STOCK FOR ROLLED THREAD SHOULD BE MINIMUM OF 5/8

1/4" NPT TO BE TAPPED OVERSIZE, AFTER GALVANIZING (NOT SHOWN IN SIDE VIEW)

NOTE: ANCHOR BOLT IS TO BE HOT DIPPED GALVANIZED AT THREADED END FOR MINIMUM DISTANCE OF 6"
SECTION

NOTES

I. MARKER SHALL BE BROKEN OFF & BOX BUILT UP TO ACCOMMODATE FRAME & COVER AS INDICATED

DRAWN BY: E.L. KEPINS
CHECKED BY: J. MACKEY
NOTES:

1. DRILL CLEAR HOLES FOR 1/2" BOLTS AND WELD 1/2" BOLTS TO BOTTOM PLATE ON 25" DIAMETER BOLT CIRCLE, SYMMETRICAL ABOUT PLATE CENTER - LINES. BOLT LENGTH TO BE DETERMINED BY SLAB THICKNESS.

2. DRILL CLEAR HOLES IN TOP PLATE TO MATCH 1/2" BOLTS IN BOTTOM PLATE; SYMMETRICAL ABOUT PLATE CENTER - LINES.

3. DRILL CLEAR HOLES FOR 1" STUDS AND WELD 1" NUTS TO TOP PLATE ON 15" DIAMETER BOLT CIRCLE, SYMMETRICAL ABOUT PLATE CENTER - LINES.

4. THIS DRAWING APPLIES TO NEW CONSTRUCTION.

5. DIMENSIONAL REQUIREMENTS FOR STANDARD TRANSFORMER BASE INSTALLATION ARE SHOWN.

6. STRUCTURAL REQUIREMENTS SHALL COMPLY WITH AASHTO SPECIFICATIONS.
ELEVATION OF ARM
FORMED AS REDUCED

SECTION A - A

SECTION B - B

NOTE
SHOES OF POLE BASE ROLL ON SHAFT.
POLE PLATE AND ARM PLATE SHOULD BE DESIGNED AND NOT SHOWN.

2.4M TAPERED STEEL ARM FOR
FABRICATED STEEL POST

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF STREET LIGHTING

CONTRACT NO. JOB NO.

REVISIONS

PROJECT ENG. DATE.
K. TAM 1/10/98

DESCRIPTIONS I.A.S

14MM X 6MM SLOTTED HOLES OUTLINE OF FLATTENED AREA
10MM X 3MM HOLE
35MM RADIUS IDENTIFICATION

ARMS PLATE DETAIL

POLE PLATE DETAIL IDENTIFICATION

10MM X 3MM HOLE WITH ROUNDED HEDGES

DRILL AND TAP M10 X 170 THREE HOLES

35MM DIA. HOLE IN SHAFT (ROUNDED ENDS)

NOTE
SHOES OF POLE BASE ROLL ON SHAFT.
POLE PLATE AND ARM PLATE SHOULD BE DESIGNED AND NOT SHOWN.

E-0760M
CONCRETE BARRIER LAMPOST FOUNDATION (SYMMETRICAL)

CONCRETE BARRIER LAMPOST FOUNDATION (ASYMMETRICAL)

NOTE:
1. IF THE FEMALE COUPLING WILL NOT BE ENCASED IN CONCRETE AT A DEPTH OF 407mm BELOW THE PAVEMENT, USE A 50mm HOLE AS IN THE SYMMETRICAL DETAIL.
NOTES:
1. SIZE AND NO. OF CONDUCTORS AS CALLED FOR IN CONTRACT PLANS.
2. 2" CONDUIT, CONDUCTORS AND WEATHERHEAD AS REQUIRED FOR UNDERGROUND SERVICE INDICATED ON CONTRACT PLANS.
3. METHOD OF ATTACHMENT, GROUNDING AND FUSING ARE AS CALLED FOR ON CONTRACT PLANS.
4. FOR ADDITIONAL DETAILS, SERVICE FROM OVERHEAD AND ALTERNATE METHODS OF TEMPORARY SUPPORT SEE DRAWING H-3029.
COMBINATION DEFLECTION AND EXPANSION FITTINGS

FOR EXPANSION JOINTS IN CONCRETE AND IN STRUCTURE

NOTES:

1. FOR 2'-0" LINEAR MOVEMENT IN EITHER DIRECTION EXPANSION FITTING SHALL BE AS PER SPRING CITY TYPE AF, 02/GREY TYPE AC, OR CRUSE HINGE TYPE XIG

2. FOR 4'-0" LINEAR MOVEMENT IN EITHER DIRECTION, EXPANSION FITTING SHALL BE AS PER SPRING CITY TYPE BE, 02/GREY TYPE ABR, OR CRUSE HINGE TYPE XIG

3. COPPER BRAID BONDING JUMPER SHALL BE AS PER SPRING CITY TYPE AJ/EL, 02/GREY TYPE BJ/AJ/EL, OR AS REQUIRED

4. EXTERNAL BONDING JUMPER IS NOT REQUIRED WHERE CRUSE HINGE EXPANSION FITTING TYPE XIG (WITH INTERNAL GROUNDING) IS UTILIZED

5. EXPANSION & DEFLECTION FITTING SHALL BE AS PER SPRING CITY TYPE BF, 02/GREY TYPE BR, OR CRUSE HINGE TYPE XB

6. CONDUIT SHALL BE SECURELY ATTACHED TO STRUCTURE BY APPROVED CLAMPS

7. CONDUIT NIPPLE OF APPROPRIATE SIZE SHALL BE PROVIDED TO CONNECT THE TWO FITTINGS

8. EXPANSION FITTING MAY BE UTILIZED INDIVIDUALLY ACROSS EXPANSION JOINTS IN STRUCTURE WHERE DEFLECTION IS NOT EXPECTED AND AS DIRECTED BY THE ENGINEER

9. EXPANSION & DEFLECTION FITTING MAY BE UTILIZED INDIVIDUALLY BETWEEN TWO SECTIONS OF CONDUIT TO DAMP VIBRATION AND AS DIRECTED BY THE ENGINEER

10. MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF DEFLECTION AND EXPANSION FITTINGS SHALL BE FOLLOWED
1. BOX SHALL BE FABRICATED FROM NO. 10 GSS GAUGE STEEL SHEET.
2. BOX FLANGES SHALL BE TURNED INWARD, DIMENSION AS INDICATED.
3. ALL SEAM SHALL BE CONTINUOUSLY WELDED; ALL WELDS SHALL BE MADE SMOOTH AND UNIFORM. EXCESS WELDING MATERIAL SHALL BE GROUND SMOOTH.
4. BOX AND COVER SHALT BE HOT DIP GALVANIZED INSIDE AND OUT AFTER FABRICATION AND SHALL RECEIVE AN ALUMINIZED FINISH TO PREVENT OXIDATION.
5. BOX COVER SHALL BE PROVIDED WITH A CONTINUOUS 1/8" THICK NITRILE GASKET SECURED TO THE COVER PERIMETER WITH AN APPROVED RUBBER CEMENT.
6. BOX COVER SHALL BE SECURED TO BOX BY 1/4" X 20X3/4" LONG TECAMER RESISTANT SCREWS NUMBER AS INDICATED.
7. BOX FLANGES SHALL BE EQUIPPED WITH THREADED INSERTS AS PER AVK'S A.T. SERIES INSERT OR APPROVED EQUAL.
8. WHERE BOX IS USED AS FUSE CUTOFF, BOX IT SHALL BE PROVIDED WITH STAINLESS STEEL HINGE 4" OPEN X 7" LONG WITH NO REMOVABLE PIN. HINGE SHALL BE ATTACHED TO BOX WITH A MINIMUM OF THREE (3) STAINLESS STEEL POP RIVETS PER LEAF ATTACH AFTER GALVANIZING.
9. BOX SHALL BE NEMA 4 ENCLOSURE.
10. ALL HARDWARE SHALL BE STAINLESS STEEL.
11. BOX SHALL HAVE KNOCKOUTS SUITABLE FOR THE CONNECTING OF CONDUITS AS INDICATED ON PLANS.
12. BOX SHALL BE NEATLY FINISHED INSIDE AND OUTSIDE. ACCEPTANCE OF COMPLETE ASSEMBLY SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

### Steel Box Details

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>9.5</td>
<td>5</td>
</tr>
<tr>
<td>Type II</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>9.5</td>
<td>5</td>
</tr>
<tr>
<td>Type III</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>14.5</td>
<td>7</td>
</tr>
<tr>
<td>Type IV</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>14.5</td>
<td>7</td>
</tr>
<tr>
<td>Type V</td>
<td>18</td>
<td>12</td>
<td>10</td>
<td>20.5</td>
<td>7</td>
</tr>
<tr>
<td>Type VI</td>
<td>24</td>
<td>18</td>
<td>10</td>
<td>26.5</td>
<td>12</td>
</tr>
<tr>
<td>Type VII</td>
<td>24</td>
<td>18</td>
<td>12</td>
<td>26.5</td>
<td>12</td>
</tr>
<tr>
<td>Type VIII</td>
<td>30</td>
<td>18</td>
<td>10</td>
<td>32.5</td>
<td>12</td>
</tr>
<tr>
<td>Type IX</td>
<td>36</td>
<td>18</td>
<td>12</td>
<td>38.5</td>
<td>12</td>
</tr>
<tr>
<td>Type X</td>
<td>36</td>
<td>24</td>
<td>12</td>
<td>38.5</td>
<td>18</td>
</tr>
</tbody>
</table>

---

NOTES

- Box shall be fabricated from No. 10 GSS gauge steel sheet.
- Box flanges shall be turned inward, dimension as indicated.
- All seams shall be continuously welded; all welds shall be made smooth and uniform. Excess welding material shall be ground smooth.
- Box and cover shall be hot dip galvanized inside and out after fabrication and shall receive an aluminized finish to prevent oxidation.
- Box cover shall be provided with a continuous 1/8" thick nitrile gasket secured to the cover perimeter with an approved rubber cement.
- Box cover shall be secured to box by 1/4" x 20x3/4" long TecamER resistant screws number as indicated.
- Box flanges shall be equipped with threaded inserts as per AVK's A.T. Series insert or approved equal.
- Where box is used as fuse cutoff, box shall be provided with stainless steel hinge 4" open x 7" long with no removable pin. Hinge shall be attached to box with a minimum of three (3) stainless steel pop rivets per leaf attach after galvanizing.
- Box shall be NEMA 4 enclosure.
- All hardware shall be stainless steel.
- Box shall have knockouts suitable for the connecting of conduits as indicated on plans.
- Box shall be neatly finished inside and outside. Acceptance of complete assembly shall be subject to the approval of the engineer.
1. ALL LIGHTING INSTALLATIONS SHALL BE DONE IN ACCORDANCE WITH THE STANDARDS FOR LIGHTING INSTALLATIONS FOR ELECTRICAL APPLIANCES, AS PUBLISHED BY THE NATIONAL INSTITUTE OF ELECTRICAL ENGINEERS. THE INSTALLATION SHALL BE COMPLIANT WITH THE CIRCULAR NO. 444, DATED MARCH 15, 1971, DEPARTMENT OF TRANSPORTATION, NEW YORK CITY.

2. THE LOCATION OF CONDUIT AND EQUIPMENT SHOWN UNLESS DIMENSIONED ARE TYPICAL. THE LOCATION SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE AUTHORITY.

3. ALL UNDERGROUND CONDUITS SHALL BE INSTALLED AT A DEPTH OF AT LEAST 3 FEET BELOW GRADE, EXCEPT WHERE SUBGRADE CONDITIONS REQUIRE DEEPER LAYING EXCEPT WHERE SUBGRADE CONDITIONS REQUIRE DEEPER LAYING.

4. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

5. THE CONTRACTOR SHALL FURNISH SHIPBOARD DRAWINGS OF ALL ELECTRICAL EQUIPMENT TO BE INSTALLED SUCH AS LAMPS, DISTRIBUTION PANELS, CONDUIT, ETC. THE SHIPBOARD DRAWINGS MAY BE SUBMITTED IN LAY OUT CHARTS OR PRINTED FORM AS REQUIRED.

6. THE PROPOSED ELECTRICAL CONDUCTORS SHALL BE ENSURELED OF EFFECTIVE RATING FOR THE WORK TO BE INSTALLED.

7. CONDUIT SHALL BE HOOKED OR HANGING FROM THE STEEL SUPER STRUCTURES, TOWARDS THE ELECTRICAL INSTALLATION. HOOKS OR HANGERS SHALL BE IN AccordANCE WITH LOCAL CODES.

8. CONDUIT SHALL BE HOOKED OR HANGING FROM THE STEEL SUPER STRUCTURES, TOWARDS THE ELECTRICAL INSTALLATION. HOOKS OR HANGERS SHALL BE IN AccordANCE WITH LOCAL CODES.

9. THE CUSTOMER SHALL FURNISH SHIPBOARD DRAWINGS OF ALL ELECTRICAL EQUIPMENT TO BE INSTALLED SUCH AS LAMPS, DISTRIBUTION PANELS, CONDUIT, ETC. THE SHIPBOARD DRAWINGS MAY BE SUBMITTED IN LAY OUT CHARTS OR PRINTED FORM AS REQUIRED.

10. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

11. ALL CONDUITS FROM JUNCTION BOX TO JUNCTION BOX FOR LIGHTING SYSTEMS SHALL BE MADE OF NON-CONDUCTIVE MATERIALS. THE JUNCTION BOXES SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCAL CODES.

12. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

13. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.


15. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

16. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

17. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

18. CONDUIT SYSTEMS CONSIDERED AS NON-ELECTRIC OR ELECTRIC CONDUCTORS SHALL BE MADE OF NON-CONDUCTIVE MATERIALS.

19. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

20. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.


22. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

23. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

24. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

25. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.


27. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

28. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

29. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

30. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

31. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

32. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

33. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

34. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

35. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

36. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

37. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

38. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

39. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.

40. THE CONTRACTOR SHALL INSTALL ALL PROPOSED CONCRETE ROADWAY BOXES IN FLAT AREA WITH A SLOPE NOT GREATER THAN 3:1.
GENERAL ELECTRICAL NOTICES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

2. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

3. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

4. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

5. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

6. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

7. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

8. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

9. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

10. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

11. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

12. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

13. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

14. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

15. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

16. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

17. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

18. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

19. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

20. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

21. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

22. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

23. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

24. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.

25. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS, ORDINANCES, AND REGULATIONS RELATING TO BUILDING CODE AND ELECTRICAL CODES OF THE CITY OF NEW YORK.
1. All lighting installation shall be in strict accordance with the standards sheets, plans and the general specifications for street lighting facilities contained in the latest edition of publication city of New York specifications.

2. Electric services will be existing 400 amp service, 120/208V, 3 phase, 4 wire, 120/208 volt, 60 hertz.

3. Feeder from service box to lamp post shall be min. 1/2" 3WG.

4. Wiring from lamp post transformer base or hand hole to each luminaire shall be N.Y.C.

5. Where cables terminate in box without going through for connection to lamp post or other electrical equipment they shall be test and capped in box with 1/2 of magic cap per connection.

6. Where conduits pass through expansion joints and construction joints the contractor shall furnish and install an approved expansion/deflection fitting with copper bonding jumper of the type called for on the plans. The fitting for this item will be included in the conduit item.

7. The contractor shall furnish and install identification tags on lamp posts in accordance with specifications and standard sheets. See details on file with Bureau of Gas and electricity, O.M. D-1604 and O.M. D-2661. Numerical system shall be as noted on the plans. Tag shall be mounted 1.300 m above ground.

8. Cable for low voltage distribution shall be rated at 600 volts (copper conductor for all permanent installations) and shall be xlpe.

9. Conduit entrance in metallic boxes shall be equipped with locknuts and dot approved insulated bonding bushings.

10. All conduits terminating underground for future extension shall be threaded and capped.

11. The contractor shall furnish and install tags for all cables in each box, including but not limited to junction box, pull box, splice box, hand hole and manholes. Each tag shows the conduit destination of the cable. Tags for 24 hour cable shall indicate "24 hour cable".

12. The contractor shall furnish, install, and completely wire all lamp posts. All lamp posts shall be manufactured in accordance with drawings and specifications.

13. All conduits in all boxes (including hangars in boxes) and lamp posts shall be boxed as specified.

14. The contractor shall furnish ship drawings of all electrical equipment to be installed such as lamps, luminaries, junction boxes, conduits, foundations, etc. A copy shall be electronically submitted for formal approval. The ship drawings must be approved by NYC division of street lighting before these materials are ordered.

15. Neutral cable shall be provided at service point only.

16. All conduit crossings shall be at right angles to roadway except as otherwise indicated and shall be installed in accordance with the bureau of 6 & 8" DNL, D-1598.

17. All conduits shall enter the narrow side of boxes.

18. Trapped sections in conduit runs must be avoided and easy drainable for communication provided into nearest service box.

19. Where flexible conduit is required on structures, the minimum length shall be 76.2 mm. Size of flexible conduit shall match size of rigid conduit to which it is connected.

20. Where cutting and threading of existing conduit is required, the work is to be performed and included in the cost of furnishing and installing conduit.

21. All box holes vacated by conduit removal shall be plugged.

22. All new luminaries to be installed on Brakett arms shall be 150 watt high pressure sodium vapor luminaire with built in ballast and asymmetric globe or as shown in the contract plans and specifications.

23. All lamp posts to be installed on inclining grade are to have level connection pads built as part of the structure for installation of the lamp posts.

24. All lamp post and handholes shall be accessible for maintenance.

25. All empty conduits shall have 1/10 non-corrosive drain wire installed.

26. Where structure mounted conduit is installed between surface mounted boxes, a conduit expansion/deflection fitting shall be installed unless a flexible conduit forms a part of the conduit run between these boxes.

27. The contractor is advised that while performing work on lamp posts, either adjustments or new installations, he shall ensure that the structure is not disrupted to more than one out of three lamp posts in sequence during normal service hours.

28. Within the immediate area of construction, the existing electrical distribution system shall be maintained by the contractor. Upon completion of work within the area, N.Y.C. 207th street lighting will again assume maintenance of the distribution system.

29. For the existing wires affected by the removal of the lamp posts, disconnect and remove the wire to the nearest active electrical service box and properly terminate the cable. This work is to be included bid price for the lamp post rental.

30. The contractor shall provide temporary lighting system using temporary conduits, wiring, poles as necessary at all stages of construction as shown in drawings tlp-1 tlp-2 tlp-3 until the new lighting system is operative.

31. Within project limits, the contractor shall be responsible for providing and maintaining the temporary lighting and any existing lighting to remain during the construction at all phases of the project. The contractor shall maintain existing poles or provide otherwise means to power existing and temporary lighting until permanent lighting system is operative.

32. The contractor shall provide and maintain temporary lighting of an ave. of 1PC and ave. axial ratio of a max. 4:1 as per N.Y.C. street lighting standards.

33. N.Y.C. street lighting system is operative.

34. Burning holes for conduits in metal boxes and steel structures is prohibited. All such required conduit holes shall be made by drilling or punching.

35. The contractor shall notify the engineers, the New York City fire department and police department 48 hours in advance of all work that will affect the existing communication system as shown in existing interim plans.

36. N.Y.C. street lighting lights to be wired so as to provide a balanced load. Subsequent luminaries shall be wired to separate phases (A, B, C) by letter by lamp post symbol indicates phase of each luminaire.

37. All luminaries and lighting standards removed under this project shall become the property of the N.Y.C. department of Transportation Bureau of street lighting and will be turned over to the agency. Contractor shall dispose of material deemed unsalable by the agency.

38. The contractor shall submit certified photometric data for all luminaries for approval to the New York city department of Transportation. Bureau of street lighting.

39. All connections between new conduit and old conduit, as shown on the contract plans, shall be conducted in accordance with New York city department of Transportation, Bureau of street lighting details.

40. It is the contractor's responsibility to determine the exact locations of the underground utilities prior to working in the area and to avoid interference. Any damage caused by the contractor's operation shall be repaired at the contractors expense at no additional cost to the city.
TEMPORARY LIGHTING PLAN NOTES:

1. DURING EACH CONSTRUCTION, CONTRACTOR SHALL MAINTAIN TEMPORARY, EXISTING, AND PROPOSED LIGHT STANDARDS USED AS TEMPORARY UNTIL CONSTRUCTION STAGE OR CONSTRUCTION COMPLETES.

2. CONTRACTOR SHALL PROVIDE TEMPORARY POWER DURING EACH CONSTRUCTION STAGE, EITHER AVAILABLE FROM THE EXISTING CONTROL CABINETS OR PROVIDING TEMPORARY LIGHTING CONTROL CABINETS.

3. MINIMUM CABLE CLEARANCE ABOVE ROADWAY SHALL BE MAINTAINED DURING CONSTRUCTION. MAXIMUM WIRE SAG SHALL NOT EXCEED 18 INCH. ANY ADDITIONAL SUPPORTS OR EQUIPMENT USED TO SATISFY THIS CONDITION SHALL BE INCLUDED UNDER THE TEMPORARY WIRING PAY ITEMS.

4. REFER TO DEMOLITION PLANS FOR LIGHT STANDARD REMOVAL AND DURING THE STAGE CALLED OUT FOR REMOVAL (DLP-01 TO DLP-12)

5. ADD TEMPORARY SUPPORT FOR OVERHEAD WIRING EVERY 65 FT AND PROVIDE WOODEN POLES FOR ROADWAY CROSSING

6. ATTACH OVERHEAD TEMPORARY CONDUCTORS, IF NECESSARY, TO STRUCTURE IN THE VICINITY.

7. PERMANENT LIGHTS USED AS TEMPORARY IN EACH STAGE TO BE CONNECTED TO THE NEW CONTROL CABINET WHEN IT IS INSTALLED AND OPERATIONAL, BY DISCONNECTING FROM THE TEMPORARY NETWORK.

8. NYCDOT DOES NOT SUPPLY EQUIPMENT FOR TEMPORARY LIGHTING. THE CONTRACTOR SHALL FURNISH ALL TEMPORARY EQUIPMENT.

9. THE CONTRACTOR SHALL PROTECT ALL TEMPORARY CONDUIT/CONDUCTORS USED/REQUIRED TO MAINTAIN POWER TO THE CONNECTED LOAD DURING VARIOUS STAGES OF CONSTRUCTION.

10. RELOCATION OF TEMPORARY LIGHTING POLES AT EACH STAGE. ALL MAINTENANCE AND ENERGY COST DURING THE DURATION OF PROJECT AND OTHER RELATED WORK AND ALSO ITEMS RELATED TO TEMPORARY LIGHTING SYSTEM NOT IDENTIFIED IN ANY PAYMENT ITEM. SHALL BE PAID IN ITEM 661.22010011.

11. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY LIGHTING OF AN AVE. OF 1FC AND AVE./MIN. RATIO OF A MAX 4:1, AS PER NYC DOT STREET LIGHTING STANDARDS.