BRUCKNER VIADUCT DECK REPLACEMENTS

PIN X731.45, Contract D900040

DB CONTRACT DOCUMENTS

PART 3

PROJECT REQUIREMENTS

Addendum #3 October 17, 2017
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New York State Department of Transportation
SECTION 1 GENERAL

1.1 PURPOSE

This Part 3 establishes the basic Requirements of the Project. The Contract Documents, NYSDOT standard drawings, manuals and specifications, and the referenced Design Codes and Manuals shall be followed for the preparation of design and construction documents and the execution of the Work. Any proposed deviation from the Contract requirements or NYSDOT standards shall be submitted to the Department’s Design Quality Assurance Engineer for review, and shall require the submission of a Non-conformance Report, where the Design-Builder is to identify, explain, and justify any deviation from the established criteria to the Department’s Design Quality Assurance Engineer.

All designs shall be prepared in U.S. Customary units. The Design-Builder shall be responsible for converting any mapping, plans, etc. into U.S. Customary units as necessary for the completion of the Project.

The design and construction shall be in conformance with the latest edition of the New York State Department of Transportation, Standard Specifications, with addenda, issued by the Office of Engineering, current as of the date of Proposal submission, excluding Section 100, which is superseded by Part 2, Section DB 100 of the Contract Documents, and except as otherwise noted in these Contract Documents.

The Design-Builder shall prepare Project Specifications for the Project, for Work Items not covered by the NYSDOT Standard Specifications or applicable Special Specifications, and shall prepare Design Plans for the Project in accordance with NYSDOT standards for general content and format, and in accordance with the Contract.

The Design-Builder shall prepare and submit a Non-conformance Report (in accordance with the provisions of DB §105-16) for any Work proposed to be or actually performed that does not conform to the Contract requirements and for any deviations from NYSDOT standards.

1.2 SCOPE

The Design-Builder shall be responsible for complying with all terms of the Contract Documents. The Design-Builder shall review and understand all terms and conditions of the Contract Documents prior to the commencement of the Project and shall be responsible for determining the full Scope of the Project by undertaking a thorough examination of the Contract Documents, the Reference Documents and the Project Site.

1.3 SCOPE OF WORK – MAJOR ITEMS

The scope of work for the Project includes but is not limited to the following items:

- Bridge deck replacement
- Joint replacement
- Pedestal and Bearing replacement
- Structural steel painting
- Steel stringer repair
- Repair to substructure elements (pier caps, abutment stems and backwalls)
- Approach slab replacement
- Bridge concrete barrier/railing replacement and upgrade
1.4 COORDINATION WITH OTHER PROJECTS

The Design-Builder shall coordinate the work so as not to conflict with others projects occurring within or abutting the Contract limits. It is expected that the following projects will be under construction during construction of this Contract:

**PIN/Description**: D262391 – MDE Deck Replacement on Viaduct Between 138th Street and Macombs Dam Bridge  
**WZTC**: TBD  
**Current schedule**: Project Completion late 2017  
**Contractor**: Tully Construction Company  
**Contact Information**: TBD  
**Brief Project Description**: TBD

**PIN/Description**: PIN x761.18 – Bruckner Blvd & 138th St. Safety Improvements  
**WZTC**: TBD  
**Current schedule**: PS&E August, 2017  
**Contractor**: TBD  
**Contact Information**: TBD  
**Brief Project Description**: TBD

**PIN/Description**: Biennial Inspection  
**WZTC**: Necessary MPT coordination  
**Current schedule**: Annual, TBD  
**Contractor**: TBD  
**Contact Information**: TBD  
**Brief Project Description**: Biennial Inspections of the RFK Bridge

**PIN/Description**: RK-65A – Bronx Plaza/Structure Rehabilitation  
**WZTC**: Significant closures of the Bronx Toll Plaza, Randall’s Island Viaduct and Junction Structure. Necessary MPT coordination  
**Current schedule**: Present to December 2018  
**Contractor**: El Sol Contracting  
**Contact Information**: TBD  
**Brief Project Description**: Reconstruction of the Bronx Plaza

**PIN/Description**: RK-21 – Installation of Fire standpipe and Upgrade of Fire Protection Systems at the RFK Bridge  
**WZTC**: Lane Closures on Bronx Kills Crossing and Bronx Approach. Necessary MPT Coordination  
**Current schedule**: Present to March 2020  
**Contractor**: Tully Construction  
**Contact Information**: TBD  
**Brief Project Description**: Installation of Fire Standpipe systems on the RFK Bridge

**PIN/Description**: RFK Bridge Preservation & As Needed Roadway Repair  
**WZTC**: Necessary MPT Coordination  
**Current schedule**: TBD  
**Contractor**: TBD  
**Contact Information**: TBD  
**Brief Project Description**: Various bridge preservation and repair activities

**PIN/Description**: RK-60/IESS – Installation of Electronic Monitoring and Detection systems at RFK Bridge Facilities  
**WZTC**: Lane closures throughout the RFK Bridge. Necessary MPT coordination
1.5 THIRD PARTY AGREEMENTS (NON-UTILITY)

No Third Party Agreements have been developed in connection with this Project.

For information regarding Preliminary DB Utility Work Agreements, refer to Section 8 of this Part 3.

1.6 DESIGN CODES AND MANUALS

In addition to this Part 3, Project Requirements, the Design-Builder must comply with all applicable engineering codes and standards, including those of the various Federal, State, and local jurisdictions.

If codes, standards and/or manuals are specified herein for the design of an element of the Project, then the edition(s) in effect on the Proposal due date shall be applicable to the Project. Responsibility for design remains with the Design-Builder in accordance with the terms and conditions of the Contract. If a code, manual or standard is subsequently modified by the issuer, the Design-Builder shall notify the Department of such modification(s) and request the Department’s decision regarding application of the modification(s).

All Work shall conform to the following documents. In the event of a conflict between the codes and the referenced documents listed below, the more stringent requirements, as determined by the Department, shall apply.

For Work not specifically covered by the individual sections of the Project Requirements, the Design-Builder shall, at a minimum, apply the Standards normally applied by NYSDOT for such Work, to the extent they do not conflict with express requirements in the Contract Documents. The Design-Builder shall be solely responsible for ensuring that it identifies and applies all correct Standards.

AASHTO:
- A Guide for Accommodating Utilities within Highway Right-of-Way
- A Policy on Design Standards - Interstate System
- A Policy on Geometric Design of Highways and Streets
- Construction Handbook for Bridge Temporary Works
- Guide Design Specifications for Bridge Temporary Works
- Guide for the Design of Pavement Structures (with Supplement)
- Guide Specifications for LRFD Seismic Bridge Design
- LFRD Bridge Construction Specifications
- Manual for Assessing Safety Hardware (MASH)
- Manual for Bridge Evaluation
- Manual on Subsurface Investigations
- Mechanistic-Empirical Pavement Design Guide (MEPDG),
- Roadside Design Guide
- Roadway Lighting Design Guide

AISC:
- Steel Construction Manual

ANSI
- ANSI/AASHTO/AWS D1.5 Bridge Welding Code
- ANSI/IES Approved Recommended Practice for Roadway Lighting, RP-8-00

Asphalt Institute:
- Drainage of Asphalt Pavement Structures
New York State Department of Transportation

ASTM:

- E2213-03 Standard Specification for Telecommunications and Information Exchange Between Roadside and Vehicle Systems
- E2259-03 Standard Guide for Archiving and Retrieving ITS-Generated Data
- E2468-05 Standard Practice for Metadata to Support Archived Data Management Systems
- E2655-08 Standard Guide for Reporting Uncertainty of Test Results and Use of the Term Measurement Uncertainty in ASTM Test Methods

Federal Geographic Data Committee:

- GIS Standards

FHWA:

- FHWA NHI-00-043 Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Design and Construction Guidelines
- FHWA NHI-01-004 River Engineering for Highway Encroachments
- FHWA NHI-05-123 Soil Slope and Embankment Designs
- FHWA NHI-11-032 GEC No. 3 LRFD Seismic Analysis and Design of Transportation Geotechnical Features and Structural Foundations
- HEC 18 Evaluating Scour at Bridges
- HEC 23 Bridge Scour and Stream Instability Countermeasures
- Manual of Uniform Traffic Control Devices (MUTCD)
- Pavement Publications
- Standard Highway Signs and Markings (SHSM) Book
- Steel Bridge Design Handbook
- Technical Advisory T6640.8A, 10/30/87 (environmental analyses)
- Traffic Monitoring Guide

NFPA:

- NFPA 70 – National Electrical Code (NEC)
- 502: Standard for Road Tunnels, Bridges, and Other Limited Access Highways

NYCDEP:

- Sewer Design Standards
- Title 15 of the Rules of the City of New York Chapter 20, Rules Governing and Restricting the Use and Supply of Water
- Title 15 of the Rules of the City of New York Chapter 31, Rules Governing House/Site Connections to the Sewer System
NYCDOT:

- City of New York DOT Systems Engineering Specifications
- Specifications for furnishing all labor and material necessary and required for the installation, removal or relocation of street lighting equipment in the City of New York
- Standard Specifications, Bureau of Highway Operations
- Standard Drawings, Division of Street Lighting
- Standard Details of Construction, Bureau of Highways, Roadway Design
- Street Design Manual
- Department of Design and Construction Design Guidelines and Directives

NYSDEC:

- Standards and Specifications for Erosion and Sediment Control (SESC)
- Stormwater Management Design Manual (SMDM)

NYSDOT:

- Annual Report titled "Axle Factor Update"
- Approved Materials List
- Bridge Detail (BD) Sheets US Customary (NYSDOT BD Sheets)
- Bridge Inspection Manual
- Bridge Inventory Manual
- Bridge Manual
- Bridge Safety Assurance Seismic Vulnerability Manual
- Comprehensive Pavement Design Manual
- Consultant Instructions (CIs)
- Design Consultant Manual
- Engineering Bulletins (EBs)
- Engineering Instructions and Directives (EIs and EDs)
- Environmental Procedures Manual (EPM) / The Environmental Manual (TEM)
- GCP-17, Procedure for the Control of Granular Materials
- Geotechnical Design Manual, including all appendices
- Highway Design Manual (HDM)
- Land Surveying Standards and Procedures Manual
- NYSDOT LRFD Bridge Design Specifications
- Manual for Uniform Record Keeping
The “Requirements” subsection of the individual sections of Part 3 – Project Requirements establishes the Department’s expectations with respect to specific Project elements. These include administrative, managerial and technical considerations as deemed appropriate to the
subject, and encompass performance specifications, design criteria, and directive instructions as the Department deems best suited to the subject. The Design-Builder shall develop its Definitive Design, Design Plans and Project Specifications in conformance with this Part 3 – Project Requirements.

The Design-Builder shall be responsible for meeting all requirements and terms contained in this Part 3 – Project Requirements unless explicitly stated otherwise.

The specific requirements in this Part 3 – Project Requirements may be more stringent and shall govern over the criteria given in the Standards. Where a specific requirement in this Part 3 – Project Requirements is more stringent than the criteria specified in a Standard, said specific requirement shall become the basis for determining compliance. Non-standard features needing justification and FHWA and/or NYSDOT approval are defined as those not meeting the criteria cited in the Standards listed in this Part 3 – Project Requirements.

1.8 DELIVERABLES

Deliverables to be submitted by the Design-Builder throughout the design and construction of this Project, and upon completion of the Project, are specified in the NYSDOT manuals listed in Section 1.6 of this Part 3 – Project Requirements. These shall supplement the review plan and consultation and written comment cycles cited in DB §111-8 through DB §111-14. The Design-Builder may submit deliverables for the Department’s consideration or consultation and written comment in addition to those cited in the NYSDOT manuals. The Design-Builder shall include such additional submittals in its review plan and revise the review plan as necessary to incorporate sufficient advance notice to the Department. It is the goal of the Department that all review and comments be completed within 10 business days.

Unless otherwise indicated elsewhere in the Contract Documents, or directed by the Department’s Project Manager, all deliverables shall be submitted in both electronic format and hardcopy format. Acceptable electronic formats include Bentley Microstation .dgn format and Bentley InRoads.alg and dtm format, Microsoft Word®, Microsoft Excel®, ArcMAP, or searchable portable document format (PDF) files, with no copy or password protection on the file content, unless otherwise indicated in a specific section of this Part 3 - Project Requirements or a Standard cited in a specific section of this Part 3 - Project Requirements.

1.9 INDICATIVE PLANS

The Indicative Plans, if provided to the Design-Builder in Part 6 – RFP Plans, convey an overall potential solution to the Project’s needs that the Design-Builder may choose to consider in developing its design. The designs presented herein have been developed to a point sufficient to present the general concepts of the Project and specifically to show the current highway boundaries and the extent of property acquisitions provided by the Department. The Indicative Plans are not mandatory, with the exception of elements specifically mentioned elsewhere in this Part 3.

1.10 DIRECTIVE PLANS

The Directive Plans, if provided to the Design-Builder in Part 6 – RFP Plans, depict required elements and components of the Project within specifically defined parameters. The Design-Builder has no latitude to adjust components or details shown on Directive Plans, unless specifically noted or through an approved Alternative Technical Concept (ATC).
1.11 CADD

CADD formatting for Design and As-Built Plans shall conform to the Department’s CADD Drafting Standards and CADD Design Standards in effect on the Proposal due date.

1.12 SCHEDULE OF PROJECT COMPLETION

All work on the design and on the construction shall be completed in accordance with Part 1, DB Agreement, Article 2, Contract Time, but in no case shall the Project Completion Date be later than June 30, 2020.

1.13 WORK PAYMENT SCHEDULE

Progress Payments will be made as each Work Item is completed to the satisfaction of the Department’s Construction Quality Assurance Engineer. Progress payments shall be subject to the requirements of DB §109-2. Payments for Design, Construction Inspection and Laboratory activities will be made in conformance with DB § 109-2.2.

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<th>WORK PAYMENT SCHEDULE BIN 1066669</th>
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<th>PERCENT OF LUMP SUM PRICE (To be completed by D-B)$</th>
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<tr>
<td>Jacking and Removal of Existing Bearings and Pedestals</td>
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## WORK PAYMENT SCHEDULE BIN 106666A

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<tr>
<td>Fabricate and Install New Elastomeric Bearings</td>
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</tr>
<tr>
<td>Construct Reinforced Concrete Bridge Deck Slab, Single Slope Barrier, and Approach Slabs</td>
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<tr>
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### New York State Department of Transportation

#### WORK PAYMENT SCHEDULE BIN 106666C

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<td>Fabricate and Install New Elastomeric Bearings</td>
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<sup>1</sup> See DB §109-12.1 and DB §109-12.2 for details.
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New York State Department of Transportation

<table>
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<th>Work Item</th>
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<tr>
<td>Install New Pedestals</td>
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</tr>
<tr>
<td>Final Agreement (Per DB §109-12.2)</td>
<td>2% (fixed)</td>
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</tbody>
</table>

Notes:
1. See Work Payment Schedule included in ITP, Appendix E. Percent of Lump Sum Price to be completed by the Proposer. Total percentage for all work items shall equal 100%.

2. Subsequent to Selection of Best Value, the Design-Builder may submit to the Department a more detailed Work Payment Schedule which breaks individual work items into multiple stages, for the Department’s review and acceptance. However, the sum of the percentages proposed for each stage shall equal the percentage for that work item submitted by the Design-Builder included on Form WPS, and in no case shall the payment for any individual stage be more than 50% nor less than 10% of the total percentage bid for that work item.

1.14 INTERIM COMPLETION MILESTONE

This Project’s Interim Completion Milestones, if applicable, are defined as shown in Part 5 – Special Provisions.

The Interim Completion Milestone Dates may not be changed without written approval by the Department’s Project Manager.
SECTION 2  PROJECT MANAGEMENT

2.1  DESIGN-BUILDER’S ROLE

The Design-Builder shall have responsibility for controlling and managing the Work, including the responsibility for quality management as defined in the Contract Documents, Part 2 - DB §§ 111, 112 and 113. This section identifies the Design-Builder’s Key personnel and summarizes the Management Plans to be produced by the Design-Builder in accordance with the Contract Documents.

2.2  DESIGN-BUILDER’S KEY PERSONNEL

The positions listed below shall be the Design-Builder’s key personnel for the Project. Key Personnel are preferred to have experience on projects of a similar size, type of work, and complexity as this Project, and should meet the qualifications described below. Proposed staff with qualifications less than those described below will receive a reduced score compared to staff that meet or exceed the described qualifications. Any requirements described as “shall have...” or “shall be...” are determined to be minimum response requirements. The Design-Builder shall provide personnel that meet these minimum requirements.

The Design-Builder’s Project Manager shall be the Design-Builder’s representative and single point of contact with the Department.

The Department’s Project Manager may designate other Key Personnel positions as needed at any time during the Contract.

A)  Project Manager: Shall have a minimum of 15 years, but preferably 20 years, demonstrated experience in construction and construction management of bridge and transportation and infrastructure projects with preferably similar size and type of work as this Project, and preferably including projects with compressed timelines, and community information requirements. Such experience in construction and management-of-construction should include at least one bridge construction project having a construction value in excess of $100,000,000. The Project Manager, who should have Design-Build experience and have extensive project management experience, can hold only this one Key Personnel position. It is preferred, but not required, that this individual be licensed and currently registered as a Professional Engineer in the State of New York. The Project Manager shall dedicate no less than 50% of their work time to this Project.

B)  Design Manager: Shall be licensed and currently registered as a Professional Engineer in the State of New York, shall be an owner or employee of the Designer and shall have a minimum of 15 years demonstrated experience in managing design for infrastructure and bridge projects preferably of similar scope as this Project. The Design Manager should have Design-Build experience, and should have specific experience on projects of similar size and type. The Design Manager can hold only this one Key Personnel position. The Design
Manager shall dedicate no less than 75% of their work time to this Project.

C) **Quality Manager:** Shall have demonstrated experience in bridge design and major infrastructure construction with at least 10 years experience in quality assurance and quality control activities, including preparation and implementation of Quality Plans and procedures for design and construction. The Quality Manager shall have worked as a Key Personnel position. The Quality Manager shall have experience of quality systems based on ISO 9001, and should have experience with the quality systems of the Department. The Quality Manager shall dedicate no less than 100% of their work time to this Project.

D) **Resident Engineer:** Should be licensed and currently registered as a Professional Engineer in the State of New York and should have demonstrated at least 10 years experience in bridge and highway construction inspection, including at least 5 years as a Resident Engineer. The Resident Engineer shall have performed Resident Engineer duties on a project within the last 3 years. Experience with NYSDOT projects preferred.

E) **Lead Structural Engineer:** Shall be licensed and currently registered as a Professional Engineer in the State of New York and shall have demonstrated at least 10 years experience in structural analysis and design of new and replacement bridges.

F) **Lead Civil Engineer:** Shall be licensed and currently registered as a Professional Engineer in the State of New York and shall have at least 10 years experience in civil roadway design, including congestion management and the preparation of Work Zone Traffic Control Plans.

G) **Project Superintendent:** Should have at least 10, but preferably 15 years of demonstrated experience overseeing work on bridge and highway construction projects. Experience should include directing and coordinating the activities of a contractor’s workforce and all subcontractors, ensuring work progressed according to schedule, within budget and that material and equipment were delivered to the site on time. The Project Superintendent should have experience as Project Superintendent on a bridge project valued at $75M or more. Experience with NYSDOT projects preferred.

### 2.3 MANAGEMENT PLANS AND SCHEDULES

#### 2.3.1 Management Plans and Schedule Requirements

The Design-Builder shall submit to the Department’s Project Manager, for review and comment or approval (as applicable), all the Management Plans listed in Table 2-1. Following receipt of the Department’s acceptance or approval of the individual Management Plans, as described in the Contract Documents, the Management Plans shall be resubmitted to the Department’s Project Manager as the Design-Builder’s consolidated Project Management Plan for the Project.
Table 2-1 – Project Management Plans

<table>
<thead>
<tr>
<th>Plan Title</th>
<th>Contract Document Reference</th>
<th>Initial Plan Submitted with the Proposal?</th>
<th>Submittal Deadline</th>
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<tr>
<td>Workforce Participation Plan</td>
<td>DB § 102-9.4B</td>
<td>No</td>
<td>60 Days after NTP</td>
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<tr>
<td>Safety Plan*</td>
<td>DB § 107-7.5</td>
<td>No</td>
<td>30 Days after NTP or 30 days prior to beginning any construction Work</td>
</tr>
<tr>
<td>Quality Control Plan*</td>
<td>DB § 113</td>
<td>Yes</td>
<td>45 Days after NTP</td>
</tr>
<tr>
<td>Overall Design-Build Team Organization Plan</td>
<td>Project Requirement Section 2.3.5</td>
<td>Yes</td>
<td>25 Days after NTP</td>
</tr>
<tr>
<td>Design Management Plan</td>
<td>Project Requirement Section 2.3.6</td>
<td>No</td>
<td>30 Days after NTP</td>
</tr>
<tr>
<td>Construction Management Plan</td>
<td>Project Requirements Section 2.3.7</td>
<td>No</td>
<td>45 Days after NTP</td>
</tr>
<tr>
<td>Design Review Plan</td>
<td>DB § 111-7</td>
<td>No</td>
<td>10 Days after NTP</td>
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<tr>
<td>Transportation Management Plan/Emergency Response Plan</td>
<td>Part 3, Section 15.3.10</td>
<td>No</td>
<td>30 Days after NTP</td>
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<tr>
<td>Initial Baseline Progress Schedule</td>
<td>Project Requirements Section 2.4</td>
<td>Yes</td>
<td>15 Days after NTP</td>
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</table>

* Requires Department approval

2.3.2 Workforce Participation Plan

The Design-Builder shall develop a Workforce Participation Plan to meet the requirements of DB §102-9.4B and submit it to the Department’s Project Manager for review and comment.

2.3.3 Safety Plan

The Design-Builder shall develop a Safety Plan to meet the requirements of Part 2, DB §107-7.5 and submit it to the Department’s Project Manager for written approval in accordance with DB §107-7.7. No construction Work shall progress and no payment shall be made to the Design-Builder until the Safety Plan is approved by the Department.

2.3.4 Quality Control Plan

The Design-Builder shall use the Initial Quality Control Plan submitted with the Technical Proposal, modify and develop it, as necessary, to include the content required by Part 2, and submit it to the Department’s Project Manager for written approval in accordance with Part 2 DB §113. The Quality Control Plan shall be revised and resubmitted to the Department’s Project Manager within 14 calendar days of receipt of the Department’s written comments and resubmitted as required until Approved by the Department’s Project Manager. No offsite fabrication Work or Construction Work shall commence before the Quality Control Plan has been approved by the Department’s Project Manager. No payment will be made to the Design-Builder until the Quality Control Plan has been approved by the Department.
2.3.5 Overall Design-Build Team Organizational Plan

The Design-Builder shall update the Initial Overall Design-Build Team Organization Plan by combining the Organizational Structure Chart and the Communication Protocol Graphic and narrative and expanding upon these initial submittals into a more comprehensive document. It shall describe the design and construction organizational arrangements it intends to implement. The organizational arrangements described should clearly identify responsibilities and reporting lines of staff, particularly relating to Key Personnel.

The Design-Builder shall include an organization chart and communication protocol graphic (on an 11” x 17” sheet of paper), illustrating the Proposer’s Key Personnel and their prospective roles and responsibilities, as well as other principal participants and any known Subcontractors having a material role in the Project’s design Work, design check Work, construction Work and construction inspection Work.

The Design-Builder shall describe the interrelationships and interfaces between each discipline within the Proposer’s organization (e.g., design, design check, shop drawing preparation and review, construction, and quality management).

The Overall Design-Build Team Organization Plan shall also describe the interrelationships and interfaces between the Design-Builder’s organization, the Department and other governmental agencies, utility owners, stakeholders, businesses, the public and other contractors working in the vicinity and impacted by the construction of the Project. This description shall also, at a minimum, address the following activities:

A) Reviews of plans and permits;
B) Progress, workshop, partnering and utility coordination meetings; and
C) Construction, engineering and inspection activities.

2.3.6 Design Management Plan

The Design-Builder shall provide a Design Management Plan and submit it to the Department’s Project Manager for Review and Comment.

The Design Management Plan shall include the Design-Builder’s approach to managing the Project, including:

A) The Design-Builder’s understanding of the Project Requirements.
B) The Design-Build Team’s organizational structure and lines of responsibility.
C) The Design Builder’s approach to delivering the Project, including how the Design-Builder will address logistical challenges of the Project, scheduling to complete the Project on time and on or under budget with emphasis on quality, design, and construction.
D) How the Design-Builder will manage and coordinate the design, design quality control and design reviews.
E) The means of reporting on the design progress; the means of tracking quality control reviews and the resolution of comments on the design and describes how design non-conformance issues will be resolved.

F) How the design effort will be coordinated with construction activities and construction means and methods for the Project.

G) A description of the proposed methods to control the design progression for the overall project to support the construction schedule.

2.3.7 Construction Management Plan

The Design-Builder shall provide a Construction Management Plan, which may include relevant material submitted with its Proposal and submit it to the Department’s Project Manager for Review and Comment.

The Construction Management Plan shall provide how well the Design-Builder understands and is organized to manage construction, construction quality control and the tools that will be implemented to provide seamless interaction with the Department’s Construction Quality Assurance Engineer for the construction of a quality Project; provides how the progress of the construction work is reported to the Department and for control of the Work; provides how non-conformance issues in construction will be resolved; provides the method of updating the Baseline Schedule; provides how the work will be progressed in coordination with other agencies; provides the methods of maintaining detours and evaluates how the interaction with the Construction Inspection Professional Engineering Firm and the Materials Testing Firm/Laboratory will occur and how these firms will contribute to the Construction Management and quality of the Project.

2.3.8 Design Review Plan

The Design-Builder shall develop a Design Review Plan to meet the requirements of DB §111-7 and submit it to the Department’s Project Manager for review and comment.

2.3.9 Transportation Management Plan/Emergency Response Plan

The Design-Builder shall develop a Transportation Management Plan/Emergency Response Plan to meet the requirements of Part 3, Section 15.3.10 and submit it to the Department’s Project Manager for review and comment.

2.4 BASELINE PROGRESS SCHEDULE

The Design-Builder shall submit the Initial Baseline Progress Schedule that was submitted with the Technical Proposal, including any updates that may be necessary due to a NTP date change.

In addition, the Design-Builder shall expand and develop the Initial Baseline Progress Schedule in accordance with DB §108-1 and Part 5, Special Provision SP-3.

Design shall be considered complete when all Design related documents have been completed and accepted by the Department including: all calculations, specifications, records of design quality control reviews and procedures; descriptions of and justification for any non-standard features created or retained as a result of the design; resolution of any non-conformance reports; and submission of “As Built” drawings.
Construction shall be considered complete when: the entire Scope of Work has been completed; any damage to the area caused by the Design-Builder’s performance of the Work has been repaired to the satisfaction of the Department; all construction quality control documents, test and inspection reports and forms have been completed; As-Built drawings have been completed; and the work site(s) have been cleaned of any debris.

2.5 MEETINGS

The Design-Builder shall convene or participate in meetings as indicated in Part 2 DB §105-17.

It is the Department’s policy to use the principles of partnering to guide the management of Design-Build contracts and the Design-Build program within the parameters covered by the laws, regulations, and other policies that govern the work. The Design-Builder shall convene or participate in meetings designed to foster the principles of partnering in accordance with Part 2 DB §103-2.

The Design-Builder shall record the minutes for each meeting.

2.6 COMPUTER AND NETWORKING REQUIREMENTS

The Department will issue Citrix connection accounts to the Design-Builder and its Construction Inspection Professional Engineering Firm (CIPE).

Upon request, the Department will also supply the Design Builder with a CSMIN network connection at the CIPE Field Office with the following Computer and Networking equipment through a third party vendor:

- 1 Wireless connection with Router
- 3 fully configured laptops w/ accessories (for RE, OE, and Chief Inspector)
- 1 Multi Function Printer

The Design-Builder shall provide ALL additional Computer and Networking equipment to the CIPE as necessary. The Design-Builder will need to provide separate high-speed communication into the CIPE office for all non-CSMIN users. A separate printer will be needed for the non-CSMIN users, as their laptops/computers will not be networked to the CSMIN MFP. It is recommended that the Design-Builder test the network connection success prior to fully equipping its staff and the CIPE firm, to ensure both hardware and software compatibility.

The following computer related specifications reflect the current technology utilized by the Department when making Citrix Connections and are provided for informational purposes only:

- 2/HM65 Chipset, and Intel HD Graphics 3000 (or equivalent);
- 2nd Generation Intel Core i5 2620M Processor, 2.70GHz (Turbo up to 3.40GHz), 1333MHz, 4MB L3 Cache;
- Mobile Intel HM65 Chipset;
- 14" diagonal LED-backlit HD anti-glare (1366x768);
- Intel HD Graphics 3000;
- 4 GB 1333 MHz DDR3 SDRAM – Dual Channel Active;
- 250 GB 7200 RPM 2.5 inch hard drive – or 120 GB Intel SSD;
- DVD R/W SuperMulti DL Drive;
- Full Keyboard;
- Broadcom 4313 GN 802.11 g/b/n 1x1 Wi-Fi Adapter;
• 65W Hardware Kit;
• 6 cell Li-ion Battery; and
• Integrated Gigabit Ethernet

Computers shall have Citrix Receiver installed, which can be accessed at:

http://receiver.citrix.com/

2.7 DEPARTMENT’S CONSULTATION AND WRITTEN COMMENTS

The Department’s review, oversight, audit, and inspection activities are referred to as “consultation and written comment” (see Part 2, DB §105-16). The Department’s consultation and written comment will be provided to the Design-Builder in writing. The Design-Builder shall be responsible for addressing the Department’s comments and shall indicate in writing whether it concurs with the comments. If the Design-Builder does not concur with the Department’s comments, then the Department and Design-Builder will work together to resolve the issue before proceeding.

If agreement cannot be reached, the issue must be resolved as provided in the Contract Documents for dispute resolution in accordance with Part 2 DB §109-10.

2.8 PROJECT WISE

ProjectWise is the preferred platform to be used to organize, manage, distribute/share and archive electronic Project design documents for NYSDOT. However, the Design-Builder may propose to utilize another internet-based platform for these purposes, subject to the Department’s acceptance. Should an alternate platform be selected, access is to be provided to FHWA-NY Division personnel. The documents to be posted to the selected platform typically include but are not limited to:

• Final design report and any modifications predicated by the Design-Builder’s actions;
• All studies and supporting reports;
• Permit Applications and Permits;
• Survey and ROW mapping;
• Photos taken prior to and during design;
• CADD and 2D/3D models files including current NYSDOT-supported Microstation and InRoads file formats;
• Engineering calculations to support designs;
• All drawing submissions (Definite, Interim, RFC, Final, As-Built, etc.);
• Engineer of Record’s estimate based on Work Payment Schedule; and
• Public Information.

All files posted to the selected platform shall be in accordance with the file naming convention and submission procedures as defined in Appendix 14 of the NYSDOT Project Development Manual.
The Design-Builder shall ensure that all electronic design documents are stored on the selected platform. Updates of engineering documents shall be provided on a monthly basis.

Regardless of the platform utilized during the progression of the Project, prior to Project completion all files shall be posted to ProjectWise in accordance with the criteria listed above.

The Design-Builder may obtain a ProjectWise account by contacting the Department’s Project Manager and providing the required account information per Appendix 14 of the Project Development Manual.
SECTION 3 ENVIRONMENTAL

3.1 SCOPE

Except as otherwise detailed herein, the Design-Builder shall be responsible for preparing its design, obtaining environmental approvals, carrying out construction activities, performing Quality Control, and undertaking other activities, including hazardous materials inspection and testing, as needed to ensure compliance with the Project’s Environmental Requirements and all applicable environmental laws and regulations.

This Project Requirement identifies certain required actions to be performed by the Design-Builder to ensure that the Environmental Requirements are complied with throughout the duration of the Project.

3.2 ENVIRONMENTAL APPROVALS

The Department has determined that this Project is a NEPA Class II, Categorical Exclusion. Class II actions that do not individually or cumulatively have a significant environmental effect are excluded from the requirement to prepare an Environmental Impact Statement (EIS) or an Environmental Assessment (EA).

The Department has determined that this project is a SEQRA Type II Action in accordance with 17 NYCRR, Part 15.

The Department has not secured any environmental permits associated with this Project. It is the Design-Builder’s responsibility to secure all environmental permits associated with and required for construction of this Project.

If during detailed design and/or construction the Design-Builder introduces design elements, variations, or methodologies that potentially induce environmental impacts not covered under the obtained approvals/permits by the Department, then the Design-Builder shall re-evaluate the NEPA process for this Project and obtain the necessary Environmental Approvals/Permits for the Project prior to proceeding with construction. This requirement also applies to proposed variations which may affect resources covered under Section 106, Section 4(f), Executive Order 11990 (wetlands), and other applicable federal and state environmental regulations.

3.3 REQUIREMENTS

3.3.1 General

A) The Design-Builder shall procure all Environmental Approvals as needed for all Design-Builder-located areas, including staging, borrow and disposal sites, and any other areas used by the Design-Builder, for its convenience, in the execution of the Project;

B) The Design-Builder shall be responsible for preparing all permit application materials and obtaining all Environmental Approvals necessary for the Project and not already obtained by the Department, including those that are precipitated by the Design-Builder’s design or actions that deviate from the requirements of any acquired permit(s) (if any). For any such approvals required to be obtained by the Design-Builder that must formally be issued in the Department’s name, the Department will cooperate with the Design-Builder as reasonably requested by the Design-Builder, including execution and delivery of appropriate applications and other documentation as prepared by the Design-Builder;
C) The Design-Builder shall be solely responsible for compliance with and violations of any Environmental Requirements; and

D) The Design-Builder is responsible for any fines, non-compliance, violations, or damages incurred by reason of failure of the Design-Builder to comply with Environmental Approvals. Resulting fines or damages shall be deducted from monies owed the Design-Builder.

3.3.2 Environmental Plans

The Design-Builder shall be responsible for preparing the following documents in conformity with all Environmental Requirements.

3.3.3 Soil Erosion and Water Pollution Control

The Design-Builder must follow the Best Management Practices per Part 2, DB Section 100.

3.3.4 Threatened And Endangered Species Coordination

Section not used.

3.3.5 Asbestos Containing Materials

A Preliminary Asbestos Assessment of the project area was performed by the Department. The complete Technical Memorandum and Preliminary Findings Draft Asbestos Sampling and Analysis Plan, dated April 22, 2016, resultant from this assessment is located in Part 7 – Engineering Data.

The Design Builder shall be responsible for performing an Asbestos Assessment of the impacted right-of-way and structures using a NYS Department of Labor licensed firm and certified inspection staff. Asbestos Containing Materials (ACMs) identified during this screening/assessment should be sampled and analyzed for asbestos content; and suspect asbestos-containing materials.

The Design-Builder shall be responsible for the abatement design, asbestos abatement, waste disposal and any required project monitoring/compliance air sampling during abatement of all confirmed and assumed asbestos containing materials if such materials will be disturbed during the performance of the Work. All asbestos abatement and waste disposal shall be performed in accordance with applicable safety and health codes and all applicable State and Federal regulations. See also DB Section 112-5.5, Asbestos.

The Design-Builder (in particular, the lead constructor on the Design-Build team) is also made aware that 12 NYCRR 56 specifically prohibits the abatement contractor from directly contracting project monitoring and/or compliance air monitoring services. In order to comply with this regulatory requirement, no Principal Participant may perform any asbestos abatement work for this Project. The Design-Builder shall subcontract asbestos abatement and Project monitoring/compliance air sampling services to separate and independent firms.
If during the course of work, any asbestos-containing materials not already documented in the asbestos screening/assessment report or Project record plans are encountered and require disturbance, the Design-Builder shall be responsible for any needed additional asbestos assessment, abatement design, asbestos abatement, waste disposal, and Project monitoring/compliance air sampling. All additional work shall be paid for under the Force Account pay item.

New York State Department of Labor (NYSDOL) asbestos licensure and applicable staff certification(s) are required for Work where confirmed or presumed asbestos-containing materials are impacted. All necessary asbestos assessment and Project design Work shall be performed in conformance with policy and guidance provided in NYSDOT’s The Environmental Manual (TEM).

Any ACMs associated with private utilities located within the Project limits shall be the responsibility of the private utility owner. The Design-Builder shall coordinate with the private utility owners for the remediation of any ACMs which may be identified.

3.3.6 Environmental Plan Deliverables

Deliverables shall be as stated elsewhere in the RFP documents.
SECTION 4 GENERAL PROJECT SCOPE OF WORK

4.1 SCOPE

The Design-Builder shall perform all Work necessary to prepare the Project site(s) for construction, maintain the site(s) in suitable condition during all stages of construction and provide cleanup and restoration of the construction site(s) and all disturbed areas.

4.2 STANDARDS

The Design-Builder shall perform the Work in accordance with the applicable Standards, Codes and Manuals cited in Section 1.6, unless otherwise stipulated in this Project Requirement, or otherwise applicable to the Project.

4.3 REQUIREMENTS

The Design-Builder shall prepare site work plans showing the extent of site works; disposal and storage locations; facility removal details; and approximate volumes; and shall provide for uninterrupted Department maintenance and operations. All regulated waste shall be handled according to Section 3 – Environmental Compliance.

The site work may include but not be limited to: clearing and grubbing; excavation and embankment; removal of pavement and pavement markings, road barriers, soil, drainage facilities, fencing, signs, and miscellaneous structures; subgrade preparation and stabilization; dust control; removal of abandoned above-ground and shallow piping and wiring, valves, meters, and other waste materials; and aggregate surfacing.

Unless specified otherwise in the Contract Documents, the Design-Builder shall remove all obstructions down to a minimum of 2 feet below the existing or proposed surrounding ground elevation or to the elevation necessary to properly construct the Work, whichever is lower.

The Design-Builder shall grade and restore all disturbed areas to match the existing surrounding ground elevation unless otherwise specified elsewhere in the Contract Documents. The Design-Builder shall cut pavement or sidewalk to full depth with straight lines at removal terminations.

The Design-Builder shall over-excavate as necessary to remove unsuitable material from under the footprint of pavements and structures and backfill with properly compacted suitable material. Topsoil may be stripped, stockpiled, and reused within the Project Limits.

The Design-Builder may only reuse materials on the Project that meet the requirements for grading and backfill materials. Disposal of obsolete, unsuitable, and surplus material is not allowed within the Right-of-Way and shall be removed.

4.3.1 Field Office

The Design-Builder shall provide, furnish and maintain a Field Office for use by the Department in accordance with the NYSDOT Standard Specifications. The Field Office shall be a Type 3 Office as described in the NYSDOT Standard Specifications.
4.3.2 Salvage

All materials removed from the Project site shall become the property of the Design-Builder, unless specifically stated elsewhere in this Part 3 - Project Requirements.

4.3.3 Surplus Quantity

Section not used.

4.3.4 Snow Removal

Snow removal on the traveled roadways within Project limits shall be the responsibility of the City of New York unless cattle-chute lane width is reduced below 14’-0”. If cattle-chute lane width is reduced below 14’-0”, snow removal shall become the responsibility of the Design-Builder.

4.3.5 Inspection Vehicles

The Design-Builder shall provide and maintain two (2) inspection vehicles for use by the Department, for the duration of the Project, in accordance with Special Specification 637.31020020.

4.3.6 Homeless Encampments

Homeless people and their possessions may be encountered within the Project limits. Prior to establishing a work site which has homeless people at that site, the Design-Builder shall contact the Department’s Project Manager, in writing, approximately one month before establishing the work site. The letter shall inform the Department’s Project Manager of the Design-Builder’s work which may affect the homeless people. The Design-Builder shall provide the location of the homeless people and date and time which the Design-Builder plans to establish the work site. The Department’s Project Manager will then contact the Regional Office (Operations/Maintenance). The Design-Builder shall immediately move into the work site after the homeless people have been relocated (by the appropriate agencies) and the location has been cleared. In the case where homeless people are encountered during the course of the Design-Builder’s activities, the Design-Builder shall immediately remove its employees from the affected site and contact the Department’s Project Manager.
SECTION 5 SURVEYING AND GIS

5.1 SCOPE

The Design-Builder shall perform all surveying tasks necessary to undertake and complete the Project including but not limited to: acquisition of terrain data (topography); mapping of roadways and appurtenances, features, bridges, and utilities as needed; locating boundaries; waterway surveys; contract control plan; construction and stakeout surveys; As-Built surveys; surveys that arise from other Project Requirements; asset inventory; and all other surveying services as necessary.

5.2 STANDARDS

The Design-Builder shall perform the surveying activities in accordance with the applicable Standards, Design Codes and Manuals cited in Section 1.6, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

5.3 REQUIREMENTS

5.3.1 Project Survey Control

Survey control, if available, will be provided as Reference Documents. The Design-Builder may supplement that information or conduct complete new survey as necessary to perform all the necessary surveys required to complete the Project, as the Design-Builder deems appropriate.

5.3.2 Department-supplied Data

The Department will provide the Design-Builder with the following Survey-Related Data as Reference Documents:

- ROW / Highway Boundary Geometry;
- Survey / Photogrammetric Base Mapping Planimetrics;
- Survey / Photogrammetric Digital Terrain Model; and
- Record Plans.

The Design-Builder shall be responsible for verifying any data used for the Project.

5.3.3 Survey Reports, Records and Maps

The Design-Builder shall submit to the Construction Inspection Professional Engineering Firm, all information listed under the ‘Documentation’ sub-section of each chapter of the NYSDOT Land Surveying Standards and Procedures Manual that is applicable to its survey work. The Design-Builder shall index and submit all calculations, notes, computer files, raw data, Project reports, meeting notes, correspondence, digital images, maps, corner records, records of survey, aerial photogrammetric products, centerline alignment maps, and other maps and related items.

The Design-Builder shall be responsible for ensuring that information submitted is compatible with the applicable NYSDOT CADD standards, software and operating systems and formats.

All survey reports and maps, including bathymetric survey plans, shall be signed-and-sealed by a New York State licensed professional land surveyor.
5.3.4 Permanent Survey Markers

This Section not used.

5.4 SURVEYING AND GIS DELIVERABLES

Deliverables shall be as stated elsewhere in the RFP documents.
SECTION 6  RIGHT-OF-WAY

6.1  SCOPE

Plans showing the existing Highway owned Right-of-Way (ROW) are included in the Reference Documents. The Design-Builder shall perform all the permanent Project Work within the existing Highway owned ROW and any additional ROW that has been, or will be, obtained for the Project. No additional Highway ROW will be obtained or is necessary for the project.

Property releases for driveway reconnections or other work that is required are the responsibility of the Design-Builder, in close coordination with the Construction Quality Assurance Engineer.

Right of ownership of all ROW and the improvements made thereon by the Design-Builder shall remain at all times with the Department. The Design-Builder's right to entry and use of the ROW arises solely from permission granted by the Department under the Contract. If the Design-Builder desires to enter the existing Highway ROW, during the procurement or prior to issuance of the Notice to Proceed, for the purposes of gathering engineering related data, the Design-Builder shall make application for a NYSDOT Highway Work Permit by contacting the Regional Office.

6.2  REQUIREMENTS

6.2.1  Right-of-Way Fencing

Any ROW fencing that has been damaged due to construction of the Project or removed by the Design-Builder shall be replaced by the Design-Builder with new ROW fencing meeting current NYSDOT standards.

6.2.2  Property Interests Identified by the Design-Builder for its Convenience

The Design-Builder shall be responsible for the acquisition and all costs associated therewith for any temporary land or other property required for the Design-Builder’s convenience outside the ROW Limits, such as for staging, lay-down, access, office space, temporary works, or other purposes. The Design-Builder shall assume responsibility for satisfying all Federal and State regulations, identifying, analyzing, and documenting the environmental impacts associated with the additional space and securing all necessary consent, including that of the Department, prior to initiating use of the space, in accordance with DB §107-22.

6.2.3  Right of Way Markers

Section not used.
SECTION 7  PUBLIC INVOLVEMENT

7.1 SCOPE

The goal of the public involvement activities is to inform the public and agency participants by providing timely information throughout the design and construction process. The Design-Builder shall be responsible for supporting and cooperating with the Department for all public involvement activities.

7.2 STANDARDS

The Design-Builder, in close coordination with the Department, shall perform the Public Involvement activities in accordance with the NYSDOT Project Development Manual: Appendix 2, Public Involvement Manual.

7.3 REQUIREMENTS

7.3.1 Public Outreach

The Design-Builder shall have the primary responsibility for performing public outreach activities for the Project, but the lead in all public outreach activities shall be the Department. All public outreach activities shall be coordinated through the Department’s Construction Quality Assurance Engineer (CQAE). All public communication activities must be reviewed and approved by the Department. This includes communication and notifications of key stakeholders (motorists, general public, area residents, educational institutions, emergency services, businesses, etc.) of road closure information, Project milestones or Project construction related activities that have the potential to affect the general public and/or residents in proximity to the Project area. Project milestones include, but are not limited to: the visible start of construction activities; travel pattern changes; significant Project accomplishments, and construction completion.

The Design-Builder shall be aware that outreach to the public is a critical component to the successful completion of any NYSDOT project. Design-Build projects by their nature introduce unknowns and variables that the public is not aware of due to the fact the design is not complete. In an effort to offset those potential concerns and anxieties that a yet fully vetted design could create, in the eyes of the public, outreach to the public shall commence early on this project. The Design-Builder shall be prepared to meet with appropriate stakeholders and the elected officials and the general public within 60 days following the issuance of the Notice to Proceed. The Department remains the lead on this activity but the Design-Builder will assist in coordinating the logistics, preparing the presentation material, the announcement of the meeting(s), and other outreach efforts necessary to capture the communities interest and participation. The Design-Builder shall be prepared at this time to discuss the design, the reason for said design, the construction methods, the schedule of the construction contract, the time periods of the day that the work will be on-going, and how traffic and pedestrians will be accommodated, as a minimum. This will all be coordinated with the Department’s Project Manager and the discussion of this meeting and coordination will begin at the Design Workshop and shall be so listed as an agenda item for the Design Workshop.

The Design-Builder shall coordinate with and provide a minimum of two weeks advance notice to the CQAE prior to all changes to traffic patterns and the following Project milestones: start of construction; Project completion; and any other interim completion milestone(s) determined by the Department.
The Design-Builder shall provide the Department with a minimum of two weeks advance notification for each public information activity (press announcements, travel advisories, PVMS postings, etc.) to allow for proper review and comment by the Department.

The Design-Builder shall provide the Department’s CQAE with a written work Schedule (including anticipated traffic changes) two weeks in advance of work that will change traffic patterns.

### 7.3.2 Media Relations

**Media Inquiries:** All media inquiries, requests for interviews from local print or broadcast news media, trade magazines or other media outlets must be referred to the CQAE for direction. The Department will coordinate and respond to all media requests. The Design-Builder shall alert all project personnel about this policy.

**Travel Advisories:** To allow for timely notice to the public, two weeks advance notice of the start of work, any lane closures, road closures, or changes to traffic patterns is required to be given to the CQAE and the Department’s Project Manager.

Notifications referenced above are in addition to the written work schedule discussed in Section 7.3.1. The Department will develop a draft travel advisory for content and quality review by the Design-Builder and other Department staff as deemed appropriate. The travel advisories will be finalized and distributed to the press and appropriate state elected officials, and posted on the Project website by the Department. However, the Design-Builder is responsible for the notification of local public officials, emergency service providers, schools, residents, businesses, and other affected parties, of any major travel pattern change.

The strategies described above are consistent with the requirements of Part 3 Section 15 – Work Zone Traffic Control and Access, and shall include Construction Bulletins published by the Department, based on information provided by the Design-Builder, especially focused on traffic changes, night time work, higher-noise construction periods or locations, or other construction activities of potential concern to the public. The Design-Builder shall be responsible for interaction with the affected homeowners, tenants and businesses with regards to issues including but not limited to, security of and access to their property or properties, utility services, night time operation, etc.

### 7.3.3 Public Information Meeting

The Design-Builder shall be prepared to partner with the Department on additional Public Information Meeting(s) to discuss the Project’s progress with the community in an open forum format. The Design-Builder shall prepare design and construction-related information about the Project and the Design-Build process and progress, schedule or construction methods being used to advance the Project, etc., that will help inform Project stakeholders. The Design-Builder shall work in cooperation with the CQAE in determining the necessary presentation materials, but PowerPoint material shall be required.

Project update meetings including public informational meetings, as discussed above, may be required during the course of construction, depending on how smoothly the Project is progressing and the community(s) reaction and receptiveness to the construction of the Project.
SECTION 8 UTILITIES

8.1 SCOPE
The utility requirements set forth in Part 4 – Utility Requirements and DB §102-5 present the Design-Builder’s responsibilities as they relate to existing and/or new utilities, the manner in which utilities shall be protected, relocated, upgraded, constructed or incorporated into the construction, and responsibilities for the Work.

8.2 STANDARDS
The Design-Builder shall perform all utility activities in accordance with the Contract Requirements, the applicable Standards, Codes and Manuals listed in Section 1.6 or otherwise applicable to the Project, and the standards required by the various utility companies affected by the work.

8.3 GENERAL REQUIREMENTS
The Design-Builder shall examine the record plans of the work site, make a field survey of the work site and examine all other available documents to determine the type and location of all utilities that may be affected by the Design-Builder’s Work. Before any work begins the Design-Builder shall inform the Department’s Project Manager what utilities are present and how they may be affected by the work.

The Design-Builder, in coordination with the Department’s Project Manager (or designee) and the Regional Utility Engineer, shall meet with all the affected Utility owners or operators for the purpose of discussing the effect on the utility facilities and to agree on a plan to maintain, protect, relocate, reinstall, or other action that may be necessary for the work to progress.

All utilities must be maintained, supported and protected during construction, unless otherwise directed by the utility owner.

Any utility conduit, conductor, splice box, pull box or other item that is part of a utility system or street light system that is embedded in a concrete deck, sidewalk or other concrete element that is being removed and replaced as part of this Project shall be replaced and its location coordinated with the utility owner unless the utility owner indicates that replacement is not required. The design and construction of the replaced utility shall be in conformance with the current standards of the Utility owner.

The Design-Builder shall be responsible for repair to any damage and consequential damages to those utilities caused by his operations at the Design-Builder’s expense. If the nature of the damage is such as to endanger the satisfactory operations of the utilities and the necessary repairs are not immediately made by the Design-Builder, the work may be done by the respective owning companies and the cost thereof charged against the Design-Builder.

The Design-Builder shall provide notice to the Construction Quality Assurance Engineer (CQAE) at least two weeks before construction begins on any portion of the Project. The CQAE will notify the Regional Utility Engineer of the pending construction and of any planned interruptions to service. It should be noted that utility companies set their own notification time frames and requirements. Preliminary time frames have been identified in Part 4 – Utility Requirements of these Contract Documents. The Design-Builder shall coordinate with respective Utility Owners.
8.3.1 Utility Relocation Agreements

Section not used.

8.3.2 Other Utility Conflicts

Please see Part 4 – Utility Requirements for additional utilities in the project vicinity that may require relocation and modification.
SECTION 9  GEOTECHNICS

9.1  SCOPE

The Design-Builder shall be responsible for all Geotechnical Work necessary for the design and construction of all permanent and temporary structures, including assessing available information, planning and implementing subsurface investigations, geotechnical analysis and reporting, geotechnical instrumentation and monitoring, and protection of existing infrastructure, structures and utilities in accordance with the requirements of the Contract Documents.

These requirements are considered as a minimum and do not include all possible conditions that may be encountered in the Design-Builder’s final design.

The Department has performed limited subsurface investigations in the vicinity of the Project Site. Information from these previous subsurface investigations has been provided as Reference Documents. Presentation of this information in no way implies that subsurface conditions are the same at other locations.

The Design-Builder shall be familiar with available geotechnical, geologic, seismic, hydrogeology, soils literature, and existing site conditions (both native and man-made), and shall interpret the existing geotechnical data pertaining to the Project Site. The Design-Builder shall form its own interpretation of the existing geotechnical data, and any additional geotechnical data the Design-Builder may obtain from its own investigations, and shall produce designs compatible with geotechnical site conditions and provide for the durability of the finished product.

9.2  STANDARDS

The Design-Builder shall perform geotechnical activities in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals cited in Section 1.6 or otherwise applicable to the Project.

9.3  DESIGN REQUIREMENTS

9.3.1  Geotechnical Work Plan

The Design-Builder shall prepare a Geotechnical Work Plan, which shall include:

A) Design-Builder’s knowledge and understanding of the geotechnical, geologic, hydrogeologic and seismic settings of the Project Site and how the nature and behavior of the soil, rock, groundwater and subsurface conditions will affect the investigation, design and methods of construction;

B) Identification of key constraints, site and subsurface conditions, and a description of how the geotechnical activities address these constraints and conditions; and

C) Types of subsurface investigations to be carried out for the Project, including locations and depths of borings and other field testing with a narrative of the in-situ tests (if applicable) and laboratory tests to be carried out.
9.3.2 Geotechnical Investigations

The Design-Builder shall plan and conduct geotechnical investigations in accordance with the Department’s and AASHTO Standards for subsurface exploration programs, and as deemed necessary by the Design-Builder’s Lead Geotechnical Engineer to establish the geotechnical conditions and to perform all geotechnical and foundation design and analysis.

The Design-Builder shall determine the State Plane coordinate location and ground surface elevation for each boring and field exploration position, and shall show the actual coordinates and the datum version, the station and offset, and the elevation for each individual boring log or exploration record in accordance with Department standards. Boring shall be located using NAD83 Geodetic Reference System. Elevations shall be referenced to the Project datum and horizontal control system.

9.3.3 Borings

Information from existing borings provided by the Department as Reference Documents may be combined by the Design-Builder with the Design-Builder’s subsurface investigation to comply with the requirements of the applicable standards. It is the sole responsibility of the Design-Builder to determine if the existing borings are suitable for use in the Project. It is the sole responsibility of the Design-Builder to determine the extent to which further borings by the Design-Builder are necessary for the Project.

9.3.4 Subsurface Investigation Records

For each subsurface exploration, the Design-Builder shall be responsible for keeping a continuous and accurate log.

9.3.5 Software Requirements

The Design-Builder shall use Bentley gINT® or similar commercial software to develop and maintain an electronic database of subsurface information including in-situ test and laboratory test results, and to produce all final subsurface exploration logs or records.

9.3.6 Geotechnical Data Report

The Design-Builder shall be responsible for preparing a geotechnical data report, signed and sealed by the Lead Geotechnical Engineer. The Geotechnical Data Report shall serve as a factual depiction of the subsurface conditions and at a minimum it shall include:

A) A detailed description of the investigation methods;

B) Complete records with summary tables of investigation;

C) Complete records with summary tables of laboratory test results; and

D) An exploratory hole location plan, showing locations of any existing (pre-award) exploratory holes for which data was used by the Design-Builder plus locations of post-award exploratory hole locations undertaken by the Design-Builder.

The Design-Builder shall provide the Department with a copy of the Geotechnical Data Report, including a final log for each subsurface investigation exploratory hole progressed.
9.3.7 Retaining Walls

The Design-Builder shall design and construct retaining walls, if required, in accordance with Section 10 of this Part 3 - Project Requirements. The Design-Builder shall provide retaining wall designs to address internal, external, and global (overall) stability and settlements (total and differential) of the walls in accordance with the AASHTO LRFD Bridge Design Specifications.

All retaining walls shall be evaluated and designed for seismic stability internally and externally (i.e. sliding and overturning). With regard to overall seismic slope stability (global stability) involving a retaining wall, with or without liquefaction, the Lead Geotechnical Engineer shall evaluate the impacts of failure due to seismic loading, if failure is predicted to occur.

Gabion and crib walls (stretcher and header type) shall not be used.

9.3.8 Geotechnical Instrumentation & Construction Monitoring

Section not used.

9.3.9 Slope Stability

The Design-Builder shall be responsible for assessing the stability and impacts of any new soil fill and cut slopes (permanent and temporary) required for the Project, and ensuring the long term stability of these slopes.

9.3.10 Temporary Works

The Design-Builder shall be responsible for the design and construction of all temporary works required for the Project.

9.4 CONSTRUCTION REQUIREMENTS

9.4.1 Dewatering and Groundwater Control

The Design-Builder shall be responsible for evaluating the potential need for dewatering and groundwater control, and for implementing such measures as appropriate, and shall evaluate the effects on existing facilities resulting from any dewatering and draw down.

9.4.2 Deep Foundations

Section not used.
9.4.3 Soil and Rock Excavations and Embankments For Roadway Foundation

Excavations and embankments for roadway foundations shall be constructed so that post construction settlement is expected to remain within two inches of the profile grade line at any point along the entire alignment. Also, prior to the Project’s final acceptance, differential settlement along travel lane and shoulder surfaces shall not exceed two inches over a 100-foot length along the alignment (longitudinal direction), or over one half inch along a ten foot length in the transverse direction or within ten feet of any approach slab or edge of structure.

9.4.4 Condition Surveys

9.4.4.1 Pre-Construction Condition Survey

The Design-Builder shall conduct a pre-construction inspection and survey of the existing condition of all structures and properties within 100 feet of vibration or settlement causing construction activities for the purposes of generating photographic and video documentation of existing damage, leaks and cracks, in accordance with the requirements of NYSDOT Special Specification 634.99010017. The pre-construction condition survey shall form the basis against which all new cracks, existing progressive cracks, or damage will be measured.

In its preparation for the pre-construction survey, the Design-Builder shall ensure that the pre-construction condition survey encompasses at a minimum all properties within areas that are identified by the Design-Builder to be potentially prone to: (i) ground vibration levels, expressed as resultant peak particle velocity, in excess of 2.0 inches per second; and (ii) predicted ground settlements of greater than ¼ inch.

The Design-Builder shall record the results of any pre-construction condition survey, which shall be signed and stamped by a Professional Engineer registered in the State of New York.
9.4.4.2 Post-Construction Condition Survey

The Design-Builder shall conduct a post-construction condition survey of the properties covered by the pre-construction conditions survey. The post-construction condition survey shall be performed by the Design-Builder within 20 calendar days of Project Completion, and it shall compare the post-construction conditions with the conditions recorded in the pre-construction condition survey. A summary of the damages observed, if any, shall be provided at the end of the report. The location and scope of the post-construction condition survey shall match those of the pre-construction condition survey. The complete documentation of the post-construction survey, describing the comparison with the preconstruction conditions and signed by a Professional Engineer registered in the State of New York, shall be submitted to the Department, both in hardcopy and electronic format.

9.5 DELIVERABLES

Deliverables shall be as stated elsewhere in the RFP documents.
SECTION 10 STRUCTURES

10.1 SCOPE

The Design-Builder shall be responsible for all work necessary to complete the design and construction of all permanent and temporary structures required to complete the Project. The design and construction of all structural systems and components shall provide functionality, durability, ease of maintenance and inspection, and safety.

The Design-Builder shall be responsible for the review and approval of all shop drawings needed for the scope of work. The review and approval process shall be in conformance with the Design-Builder’s Quality Control Plan.

10.2 STANDARDS

The Design-Builder shall perform structural design and construction activities in accordance with the Contract Requirements and the applicable Standards, Design Codes, and Manuals cited in Section 1.6, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

10.3 DESIGN REQUIREMENTS

The Design-Builder shall design new bridge components, including but not limited to the following: reinforced concrete deck, approach slabs, deck joints, link slabs, concrete bridge barriers, bearings and drainage systems.

The existing roadway alignment, profile and overall bridge width shall remain unchanged and the new bridge components shall be designed per the NYSDOT LRFD Bridge Design Specifications with Blue Pages.

The following work shall be performed:

- Replace the existing concrete deck slab and wearing surface with 9.5 inch (minimum final thickness after diamond grinding) concrete deck with integral wearing surface – Type 1 Friction. The new/replacement deck shall be made composite with the steel superstructure. All existing shear studs shall be replaced.
- Eliminate joints by utilizing a link slab at the locations noted in the Directive Plans.
- For joints at locations noted in the Directive Plans, design and install armorless joint systems.
- Deck Joints at abutments shall be eliminated if permitted by the NYSDOT Bridge Manual.
- Replace existing bearings with elastomeric bearings. Fixed bearings shall be designed to meet the design criteria provided in the Directive Plans.
- Repair deficient steel structural elements as shown on the directive plans; payment for all BINs will be made under item 800.06010015 Steel Superstructure Repair Work – Directive Repairs and the bid should be based upon the repair types and locations shown. Steel repairs that may be required beyond that shown in Part 6 – RFP Plans will be paid for by drawing down from item 800.06020015 Steel Structure Repair Work – Unanticipated Repairs. All repairs shall bring members back to full capacity.
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- Replace all pedestals with new pedestals.
- Existing steel bolsters connected to the bottom flange of the girders shall be either (1) removed or (2) retained at the contactors option providing the bolster has no section loss. Existing steel bolsters are to be removed if necessary to obtain the standard 6” minimum pedestal.
- Replace approach slabs with new approach slabs (except Ramp RC).
- Replace all pressure relief joints.
- Repair deficient structural concrete substructure elements as shown on the directive plans in Part 6 – RFP Plans; payment will for all BINs will be made under item 800.06060015 Concrete Substructure Repair Work – Directive Repairs and the quantity bid should be based upon the total including contingency shown. Concrete repairs that may be required beyond the square footage shown in Part 6 – RFP Plans will be paid for by drawing down from the Force Account under item 800.06070015 Concrete Substructure Repair Work – unanticipated repairs. Reinforcement damaged by concrete removal operations are the responsibility of the Design-Builder.
- Paint all structural steel repairs and structural steel within 5 feet on both sides of existing joints and as shown on the Directive Plans. Paint color shall match the existing paint color. Class A containment shall be provided for painting operations.
- Relocate existing electrical conduit under the existing deck and embedded in the concrete bridge parapets. The new conduit shall be located inside the concrete barriers.
- Replace the existing single rail and concrete barrier with 3’-6” single slope concrete barrier (TL-5).
- Retrofit existing structure to accommodate new sign structures.

Components

A) Barriers, Railings and Pedestrian Fencing: Temporary traffic barriers shall meet, as a minimum, the testing requirements of TL 2 and permanent traffic barriers shall meet, as a minimum, the testing requirements of TL 5.

Refer to Section 10.3.1 for aesthetic requirements related to bridge parapet walls, bridge railing, and fencing, if any.

B) Decks: Full depth precast panel and/or cast in place decks are required; stainless steel rebar (Grade 75) shall be used. Cast in place decks shall use internally curing concrete as per NYSDOT Special Specifications 557.51010018 and 557.54010018. Two-course decks with asphalt overlays as defined in the NYSDOT Bridge Manual are not permitted. Unfilled steel grating decks and orthotropic steel decks are not permitted. Bridge decks shall be made fully composite with the underlying primary member system. All decks shall be protectively sealed.

If a combination of cast-in-place and precast deck solution is utilized, the Design-Builder must diamond grind the entire deck surface between expansion joints. An additional ½” slab thickness over the top mat reinforcement will be added to accommodate diamond grinding.

If a precast deck is set, followed by placement of an adjacent cast-in-place deck, a closure pour is required between the deck systems if the precast deck is under live load during the placement. Additionally, a Cast-in-Place (CIP) slab poured adjacent to previously placed CIP slabs with active live loads require a closure pour.

All closure pours shall be UHPC in conformance with NYSDOT Special Specifications Item 557.64010103. Closure pours shall not be placed adjacent to cast in place deck pours for a minimum of 72 hrs.
The use of prestressed concrete panels for forms is not allowed.

Link Slabs: Link slabs shall be as shown in the Directive Plans. The link slab used shall be one of the following two types:

1. Ultra-High Performance Concrete (UHPC): The design shall follow the design method developed by the NYSDOT Office of Structures titled “Link Slab Design Example” located in the reference documents. UHPC shall confirm to NYSDOT Special Specifications Item 557.64010103.

2. Link slab using the same concrete as for the deck (can only be used when the entire deck is cast in place): The design shall follow the method described in the PCI Journal paper titled “Behavior and Design of Link Slabs for Jointless Bridge Decks” by authors Alp Caner and Paul Zia, May-June 1988, Volume 43, issue 3.

All joint headers shall be constructed using stainless steel reinforcement.

For precast decks: (1) lifting hardware shall not be permitted on the top of the slab (2) shall be per NYSDOT Special Specifications ITEM 557.64010103 and the “Precast Deck Panel Connection Details” per the Directive Plans (3) wearing surface shall be diamond ground and (4) Integral Precast Concrete Barrier per NYSDOT Special Specification ITEM 557.11010003 is optional.

Top surfaces of all newly placed decks including approach slabs and sidewalks shall be inspected by the Design-Builder’s Construction Quality Control Engineer after completion of curing and prior to diamond grinding and sawcut grooving. A report shall be generated and submitted to the Department’s CQAE identifying all cracks wider than 0.02 inches. Cracks wider than 0.02 inches shall be epoxy injected as per ITEM 555.80020001 - CRACK REPAIR BY EPOXY INJECTION (RESTORATION). This work shall be completed prior to grinding and grooving. Penetrating sealer shall than be applied in accordance with the NYSDOT Bridge Manual.

C) Bearings: Existing bearings shall be replaced with elastomeric bearings designed using the provisions of the NYSDOT LRFD Bridge Design Specifications with Blue pages. Extreme Event I Load Combination does not apply for this design. For all other applicable load combinations, the loads shall be distributed among all supports in proportion to their stiffness (combined stiffness of substructure and bearings).

Bearing supporting the steel box beams are not to be replaced.

The yield strength calculation for the pins at the fixed bearings will be such that the pin will yield at between 80% and 100% of the applied horizontal load given in the tables provided in Directive Drawing No. LSL-01. Overstrength factors need not be included in this design.

The Design Builder has the option of using an elastomeric Base Isolation Bearing System per NYSDOT Special Specifications Item 565.64mn16 in lieu of using the design criteria noted above. The following applies: (1) The reduced effective area as specified in Section 5.7.4.2 shall not be used for the computation of pier capacity (2) Extreme Event I Load Combination does not apply for this design (3) loads shall be distributed among all supports in proportion to their stiffness (combined stiffness of substructure and bearings).

The Design Builder is permitted to design and execute a lifting operation to facilitate the construction of the new pedestals and bearing installation under active live loads prior to placement of the new superstructure deck. The design of the lifting system shall account for all appropriate lateral and longitudinal loads and include a narrative of how the lateral and longitudinal stability of the structure is maintained while in a supported position.

The new pedestals and bearings shall be directly receiving all superstructure loads prior to the placement of the new concrete deck.
D) Substructures:

Abutments: The tops of all bridge seats, all bearing pedestal surfaces, and the backwall tops and face below expansion joints shall be coated with penetrating type protective sealers. Epoxy Coated reinforcement shall be utilized at all exposed surfaces of bridge seats, all bearing pedestals, and backwalls. Reinforcing bars that extend from the abutment stem into the backwall below expansion joints shall not be plain steel.

The tops of all bridge seats shall be pigeon proofed using type 316 stainless steel bird spikes or type 316 stainless steel screens.

Pier Caps (if necessary): The tops of all piers and bearing pedestal surfaces below expansion joints shall be coated with penetrating type protective sealers. Epoxy Coated reinforcement shall be utilized at all exposed surfaces of pedestals. Reinforcing bars in the pier cap below expansion joints shall not be plain steel.

Embedded steel removed from piers and abutments shall be removed to a depth to provide 2 inches of cover and patched with a material from the NYSDOT Materials Approved List, Sections 701-04 or 701-08; payment will be made under 800.06060015 Concrete Substructure Repair Work – directive repairs. Repaired area shall be finished to provide a smooth surface.

All concrete substructure repairs shall have a finish surface that is surface true to and with the existing unprepared concrete surfaces. The new repaired areas shall not be recessed nor protruding.

E) Existing Lateral and Transverse Seismic Restraints:

- Longitudinal restraints shall be removed at (1) all abutments and (2) expansion joints located at piers. Removal of the remaining restraints is at the option of the contactor.
- Transverse/Lateral restraints shall be removed at piers where any bearing line is fixed, optional at other locations.

F) Drainage: Drainage requirements are outlined in Section 17 of these Project Requirements.

G) BIN Plate Sign: The Design-Builder shall furnish and install a new BIN plate meeting the requirements set forth in this section.

The material requirements for the BIN plate are:

- Panel with reflective background: The aluminum panel shall conform to the requirements of the NYSDOT Standard Specifications. The background material shall be green reflective sheeting conforming to the requirements of the NYSDOT Standard Specifications for Class A Sheeting. The size of the panels shall be 1/8 inch thick by 3 inches by 12 inches. A thin rubber or plastic gasket or sheeting matching the plate size shall be placed behind the plate prior to installation.

- Numbers: The numbers shall be reflective sheeting conforming to the requirements of the NYSDOT Standard Specifications for Class A Sheeting, except that the adhesive shall be pressure-sensitive such that the numbers can be applied to the background in the field. The numbers shall be 2 inches high and silver-white in color conforming to FHWA series C dimensions.

Prior to placing the numbers on the panel, the reflective background shall be clean and free of dirt and oil which may adversely affect proper adhesion. The numbers shall be placed on the reflective background, perpendicular to the longitudinal axis of the panel and vertically centered. The reflective background and numbers shall be coated and/or edge sealed in accordance with the recommendations of the sheeting manufacturer.

The BIN plate shall be attached to the beginning abutment, right side of the bridge using expansion anchors. The plate shall be placed high on the abutment, near the fascia of the bridge so that it cannot be painted over via a spray paint can or easily removed or damaged.
10.3.1 Aesthetics

Any superstructure steel that utilizes a protective coating of paint shall be painted with a coating matching the paint color on the existing structures.

10.4 DEMOLITION REQUIREMENTS

10.4.1 Scope

The Design-Builder shall demolish and remove the existing bridge deck and other elements (e.g., lighting, drainage system) noted elsewhere in the RFP within the Project Limits in a safe and environmentally acceptable manner.

The Design-Builder shall test for the presence of Hazardous Materials in all structures to be disturbed to ensure the handling, removal and disposal is done in accordance with all applicable laws and standards.

The abatement of all Hazardous Materials shall be completed to the greatest extent possible prior to any demolition taking place unless a legal variation from related laws, rules and regulations can be obtained. If the Hazardous Material has been identified through the Hazardous or Asbestos Screening document and/or the record plans, the Design-Builder is responsible for all costs. Should Hazardous Material or Asbestos be found and information related to its presence not previously available to the Design-Builder, all costs associated with abatement, containment, removal, and disposal shall be covered under the Fixed Force Account item.

The Design-Builder shall perform all Work with care so that any materials that are to remain in place, or that are to remain the property of the Department shall not be damaged. If the Design-Builder damages any materials that are to remain in place or which are to become or to remain the property of the Department, the damaged materials shall be repaired or replaced in a manner satisfactory to the Department at no cost to the Department.

The Design-Builder shall ensure that no aspects of the Works have a detrimental effect on public safety or the environment. Primary protective shields shall be provided in accordance with Item 634.20010111 at all locations where the existing concrete deck is being removed and/or replaced or where new deck is being installed. Secondary Protective Shields shall be provided in accordance with Item 634.20010211 in addition to primary protective shields where live traffic or pedestrians are present. The protective shields shall be designed to support a minimum load as follows:

Primary Shields – 200 #/ft². Additional loading shall be considered to take into account loads that may be imposed on it by drop induced impact and /or a person falling from the structure. In areas where only primary shields are provided, the design builder shall additionally install a plywood layer with all edges and seams sealed, to prevent any dust, particles or debris from falling to the area below the shields. When secondary shields are also required, see below, the primary protective shielding shall be designed to support a minimum load of 100 #/ft².

Secondary Shields – 100 #/ft². Additionally, the localized area where Secondary Shields are required shall not be less than 12’ x 12’. Shielding system’s cables, clips, hangers, decking, fittings and other components of the shielding shall be capable of supporting these loads.

The Design-Builder shall assume responsibility for safety and maintenance of all existing structures within the Project Limits, identified for removal in accordance with DB §105-12.

Utility connections shall be discontinued and capped in accordance with the requirements of the utilities companies or the Department prior to demolition works.

10.4.2 Standards

The Design-Builder shall perform the demolition activities in accordance with the Contract Requirements and the applicable Standards, Codes and Manuals listed in Section 1.6 unless otherwise stipulated in this Project Requirement, or otherwise applicable to the Project.
10.5 CONSTRUCTION REQUIREMENTS

The Design-Builder shall develop erection procedures for the bridge that include complete detailed erection sequence drawings; erection stresses in permanent and temporary members; bent and falsework reactions determined for each construction stage.

10.5.1 Construction Vehicles on Bridge

The Design-Builder is prohibited from running equipment that does not operate on rubber tires (milling machines, rollers, etc) across bridge decks unless proper precautions (mats, etc) are provided to prevent damage to the deck. The methods used to move equipment across bridge decks shall be subject to approval by the Construction Inspection Professional Engineering Firm with comments from the CQAE.

10.6 LOAD RATING REQUIREMENTS

Prior to Release-for-Construction of any Bridge design, the Design-Builder shall submit draft Load Rating Summaries of all ratable elements of the Bridges to the Design Quality Assurance Engineer for review. The draft Load Rating Summary shall be accompanied by backup calculations (Level 1) and one (1) electronic copy of the input files.

Prior to any bridge in this Project being opened to traffic, including temporary bridges, the Design-Builder shall provide to the Department, the load rating computations, including AASHTOWare Bridge Rating, BrR (formerly known as Virtis) load rating files, as per NYSDOT standards and manuals for review and acceptance by the Design Quality Assurance Engineer. Load rating computation submission(s) in any format other than BrR shall be pre-approved by the Department. The final stamped and signed load rating package shall be submitted to the Design Quality Assurance Engineer no later than 30 calendar days prior to the scheduled opening to traffic of the structure. The submitted package shall have both LRFR and LFR packages.

Note: If Design-Builder elects to utilize a concrete barrier integral with the precast deck, the barrier shall be considered a DC1 load.

All Rehabilitated bridges shall have load ratings equal or greater than the rating prior to the proposed rehabilitation unless stated otherwise in the RFP. The Load Ratings of the existing structures are:

- BIN 1066669:
  - HS20 INV/OP= 37 T/61 T
- BIN.106666A
  - HS20 INV/OP= 43 T/71 T
- BIN.106666B
  - HS20 INV/OP= 42 T/70 T
- BIN.106666C
  - HS20 INV/OP= 44 T/74 T
- BIN.106666D
  - HS20 INV/OP= 39 T/65 T
- BIN.1066730
  - HS20 INV/OP= 39 T/66 T

10.7 DELIVERABLES

Deliverables shall be as stated elsewhere in the RFP documents.
SECTION 11 LANDSCAPE ARCHITECTURE

11.1 SCOPE
The Design-Builder shall perform the landscape architectural activities as described in this Section 11.

11.2 STANDARDS
The Design-Builder shall perform site work in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals cited in Section 1.6, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

11.3 GENERAL LANDSCAPE DEVELOPMENT

11.3.1 Existing Vegetation
Existing vegetation removal and disturbance should be minimized to the cut/fill limits and any removals, whether within the cut/fill limits or beyond those areas, shall be replaced in kind with native species appropriate for USDA NY Plant Hardiness Planting Zone 7b, as described in Section 11.3.2.

Prior to the removal of any trees or shrubs, an inventory of existing trees and shrubs shall be prepared by the Design-Builder and a copy provided to the CQAE. The inventory shall include major deciduous trees over 6 inches in diameter at breast height (DBH), coniferous trees over 6 feet in height, and deciduous or evergreen shrubs between 3 feet and 6 feet in height. The inventory shall include the size, location and species of each tree or shrub. Only living trees and shrubs shall be included in the existing tree inventory.

The Design-Builder shall coordinate with the New York City Department of Parks and Recreation (NYCDPR) prior to removing any existing vegetation located within any Park or disturbing any NYCDPR Property. The Design-Builder shall obtain a Permit from the NYCDPR prior to removing any trees located within the Project Area.

Vegetation outside the limits of disturbance shall be protected with temporary plastic barrier fence along the limit of disturbance line.

Disturbed areas shall receive topsoil and turf establishment. The type of topsoil and turf establishment, either roadside or lawn, will vary based on location.

11.3.2 Tree Replacement Factors

A) Every live, deciduous tree greater than six inches diameter at breast height ("DBH") which is removed must be replaced with a total quantity of deciduous trees a minimum of 2 inch caliper (size measured 6 inches above the base of the tree) equal to the total DBH size of the tree removed. For example, a 10 inch DBH tree removed could be replaced with (5) two inch caliper trees or (2) three inch and (1) four inch caliper trees; however the replacement quantity will go down if larger caliper trees are used for replacement.

B) Every live, coniferous tree removed must be replaced with a total quantity of coniferous trees equal to the height and width of the tree removed. For example, a 20 ft high x 10 ft wide coniferous tree could be replaced by two (2) 10 ft high x 5 ft wide coniferous trees.
C) Every live shrub, between 3 foot height and 6 foot height, removed must be replaced with a total quantity of shrubs equal to the quantity of shrubs removed.

D) Each replacement tree should be the same genus and species of the tree removed, unless the tree being removed was identified by the Design-Builder as an invasive plant species.

E) The minimum replacement sizes shall be as follows: 2-inch caliper for major deciduous trees, 1.5-inch caliper for minor deciduous trees, 6-foot height for coniferous trees, 3-foot height for deciduous shrubs, and 2-foot height for evergreen shrubs.

11.3.3 Replacement Locations

Replacement planting may be located in the available right-of-way near the original locations of the trees that were removed.

Replacement planting may also be done near the right-of-way line or on private property. Planting on private property may only be done if private property owners provide written permission to the Design-Builder and agree to take over the long term care and maintenance of the plant material, and the appropriate release is obtained by the Design-Builder and in consultation with the adjoining property owner in accordance with NYSDOT EI 11-010.

11.3.4 Proposed Planting

The Design-Builder shall not use invasive plant species for any of the proposed planting as required by the New York State 2012 Invasive Species Prevention Act, or a monoculture of plant species, to reduce the potential for disease or invasive insect species to eradicate the proposed planting. Planting shall be located in a manner that does not interfere with the safe use of travel ways. Planting should be designed in a manner that provides a mix of plant material species to create seasonal interest for the traveling public.
SECTION 12 SIGNAGE, PAVEMENT MARKING AND SIGNALS

12.1 SCOPE

The Design-Builder shall provide all temporary and permanent fixed signing, permanent pavement markings and signal work required for the Project.

The Design-Builder shall be responsible for identifying, designing, detailing, fabricating, delivering and installing all signing (including reference markers) and pavement marking materials and shall install all components necessary for a complete and functional system which, in addition to meeting the design and construction criteria specified above, meets the following requirements:

A) Provides for the orderly and predictable movement of all traffic;

B) Provides such regulation, guidance, warnings and advisories as are needed to ensure safe and informed operation;

C) Is fully and seamlessly integrated into the existing signing elements beyond the Project limits; and

D) Is integrated into the existing intelligent transportation system (ITS) components, if applicable.

The Design-Builder shall be responsible for the review and approval of all shop drawings needed for the scope of work. The review and approval process shall be in conformance with the Design-Builder’s Quality Control Plan.

12.2 STANDARDS

The Design-Builder shall perform the signage, pavement marking and signals activities in accordance with Contract Requirements and the applicable Standards, Design Codes and Manuals cited in Section 1.6, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

12.3 REQUIREMENTS

12.3.1 Design Requirements

The Design-Builder shall develop a signing and pavement marking plan and a traffic signal plan for the Project that shall:

A) Provide for all components as called for in this Section 12;

B) Encompass the replacement of all existing signs and sign structures within the Project limits;

C) Provide signing, traffic signals and pavement markings for bicycle and pedestrian facilities within the Project Limits, where applicable;

D) Locate signs in accordance with the MUTCD and the NYS supplement; and

E) Provide signs with high reflectivity with Type IX sheeting such as to not warrant sign lighting.
Plans, Details and Specifications for all Temporary and Permanent signs, pavement markings and signals shall be submitted to the Department for review.

Temporary signs, pavement markings and signals shall be provided for all stages of construction as required until permanent signs, pavement markings and signals are installed.

12.3.2 Construction Requirements

12.3.2.1 Signs

The Design-Builder shall replace all existing NYSDOT signs located within the Project Limits, except as noted below. The Design-Builder shall not reuse any existing NYSDOT sign materials as part of the permanent signing installation and shall be responsible for the disposal of all signing materials and structures that are removed from the Project, except as noted below. Standard signs owned by municipalities other than NYSDOT, and non-standard signs owned by private entities but placed within NYSDOT right-of-way, with the acceptance of the Department, shall be removed, stored and reinstalled as required.

The Design-Builder shall be responsible for the provision of all signs, posts, frames and other structural components required for the installation and support of the sign panels.

The following overhead sign structures (including sign panels and supports) shall be removed and replaced:

**Southbound**
- Cantilever OSS near 139th Street, at about Sta. 29+50.
- Full span OSS near 138th Street, at about Sta. 24+40.
- Cantilever OSS near end or Ramp SB, at about Sta. 8+00.
- Sign mounted to face of retaining wall supporting end approach for Ramp SB, at about Sta. 10+00.
- Overhead Sign mounted to Pier NB-13 at about Sta. 17+90 of Ramp RC

**Northbound**
- Sign mounted to Pier 29 at start of Ramp RD, at about Sta. 27+80.

The following overhead signs and sign structures shall remain in place:

**Northbound**
- Full span OSS just north of RFK Bridge, at about Sta. 11+30.
- Cantilever OSS just north of 141st Street, at about Sta. 38+00.

12.3.2.2 Pavement Markings

All pavement markings shall be Epoxy and be uniform in type, color, dimensions, location, and reflectivity. Pavement markings shall be 20 mil thickness and shall be furnished and installed in conformance with the Standard Specifications.

12.3.2.3 Traffic Signals

Section not used.
12.3.2.4 Loop Detectors
Section not used.

12.3.3 Conduit/Cabling Requirements
Section not used.

12.3.4 Signal Heads/ Signal Poles
Section not used.

12.3.5 Pullbox
Section not used.

12.3.6 Power Supply
Section not used.

12.4 DELIVERABLES
Section not used.
SECTION 13 LIGHTING

13.1 SCOPE

The Design-Builder shall conduct all Work necessary to provide all required lighting and lighting components required for the Project. This includes design, fabrication and construction of all transportation related permanent and temporary roadway lighting of the bridge and roadway within the Project Limits.

The Design-Builder shall be responsible for the review and approval of all shop drawings needed for the scope of work. The review and approval process shall be in conformance with the Design-Builder’s Quality Control Plan.

13.2 STANDARDS

The Design-Builder shall perform the lighting activities in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals listed in Section 1.6, or otherwise applicable to the Project, and the New York City Department of Transportation Standards, Specifications and Notes included in Part 7, Engineering Data.

13.3 REQUIREMENTS

13.3.1 General Requirements

The Design-Builder shall be responsible for designing, fabricating, furnishing and installing all new components (from the utility company’s power supply connection forward to the luminaries) required to provide a fully functioning, integrated lighting system for the Project including, but not limited to, new luminaires, controls, poles, mounting, switches, panels, cabinets, enclosures, wiring, conduits, and support hardware.

The Design-Builder shall prepare all lighting calculations for all temporary and permanent lighting for the Project, including IES files, and submit them to the Department and the New York City Department of Transportation Division of Street Lighting (NYCDOT-DSL) for review and approval. The Design-Builder shall assume that NYCDOT-DSL will require four (4) weeks for review of the lighting submittals. The contact person for NYCDOT-DSL is Mr. Akmal M. Mikhail, 34-02 Queens Blvd., Rm #218, Long Island City, NY 11101; 212-839-3368.

Submit Lighting Calculation that shall conform to Street Lighting requirements:

- Bruckner Expressway with Average of 0.6 fc – 0.8 fc and a max Ave./Min. ratio of 4:1.
- Ramps and gore area with average of 1.2 fc and max Ave./Min. ratio of 4:1.

Submit voltage drop calculations & wiring diagrams that is related to the same Control Cabinet. (Inside and/or Outside of contract limits)

Street Lighting plans package shall include:

- Street Lighting notes.
- Street Lighting legend of all used street lighting items on plans.
- List of all applicable Street Lighting Standard Drawings & Specifications.
- List of all applicable State pay item numbers.
Conduits for electrical cables and electric boxes shall be embedded in concrete parapets. Light posts shall be mounted on concrete parapets where practical. The electrical conduits for lighting shall not be surface mounted nor visible to the traveling public.

The Lighting System within the Project limits shall be protected (including at grade system) and fully maintained by the Design-Builder for the duration of the Project.

13.3.1.1 Power Supply Requirements

For reference, the lighting installation shall comply with the following:

A) Meet all requirements of NFPA 70 – National Electrical Code (NEC);
B) All outdoor electrical enclosures shall be type 316 stainless steel, rated NEMA 4X or a higher degree of protection; and
C) Meet all requirements of applicable IEEE and ANSI power engineering standards.

13.3.1.2 Removal of Existing Equipment

All disconnected luminaires, light poles, and associated equipment shall be removed and disposed of by the Design-Builder. All wiring, switches, panels, cabinets, enclosures, and other electrical equipment shall be removed and disposed of by the Design-Builder.

13.3.2 Permanent Lighting System

13.3.2.1 General

The Design-Builder shall be responsible for ensuring that the permanent lighting system meets the following requirements:

A) Provides illumination such that the road surface illumination, over the Bridges and approach roadways and under the Bridges, meets or exceeds the uniformity and the illuminance and/or luminance criteria during darkness;
B) Can be fully and seamlessly integrated into the existing permanent lighting elements adjacent to the Project limits;
C) Provides fixtures that are water tight and intended for a marine/industrial environment; and
D) Provides LED lighting fixtures above and below deck at all bridges;
E) Can be fully and seamlessly integrated into the existing permanent lighting elements adjacent to the Project limits;
F) Utilizes a photo-control switch system that automatically activates lighting before dusk and deactivates the system past dawn;
G) Utilizes lighting components that are readily available and not proprietary equipment.
13.3.2.2 Construction Requirements

The Design-Builder shall provide permanent lighting materials that satisfy the Project Requirements and applicable codes and standards.

13.3.3 Temporary Lighting System

The Design-Builder shall ensure that the existing lighting levels within the Project limits are maintained at all times. A temporary lighting system shall be installed as necessary to meet this requirement.

13.3.4 Underdeck Lighting at Intersections

The Design-Builder shall furnish and install underdeck lighting at the 138th Street, 140th Street, and 141st Street intersections to provide average lighting level below deck of 5 foot-candles encompassing the entire limits of each intersection, including the roadway and both walkways the full width of the viaduct. The power supply for the new underdeck lighting shall be connected to the above-deck lighting power supply rather than the surface street lighting power supply.

13.3.5 Transfer of Power Supply for Lighting on Ramp RC

The Design-Builder shall transfer the power supply for lighting on Ramp RC such that the power is supplied by TBTA power source, specifically from the TBTA meter room at the north end of the RFK Bridge. Refer to TBTA plans posted as reference documents on the Project website.

Under TBTA Contract, as shown on Drawings E-2004, E-2003 and E-2001, a 4” empty conduit (no cable) #74, #75, #91 was installed from Bronx Meter room stub up and cap to junction box JB #3. The Design-Builder shall complete the following:

- Extend conduit from JB#3 to all the light poles on Ramp RC
- Extend conduit from outside Bronx Meter room to Panel RL-1N in meter room.
- Install power cable from Panel RL-1N to all light poles on the ramp RC and install all light poles and luminaires on the ramp RC.
- Install circuit breakers in panel RL-1N

This work shall be coordinated with the TBTA.

13.4 DELIVERABLES

Deliverables shall be as stated elsewhere in the RFP documents.
SECTION 14  INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

14.1  SCOPE

The Design-Builder shall perform all work necessary to design, furnish, build, and install temporary and permanent replacement of all ITS communication system field devices for uninterrupted service of the INFORM traffic management and traffic signals.

The ITS System work in the Project shall consist of the following:

The Design-Builder shall maintain and protect the existing system in its present location and condition during the performance of the work and at the completion of the Project, except for the CCTV camera specified in 14.3.7, which shall be removed and disposed. The Design-Builder shall maintain and protect the existing Fiber Optic trunk cables located in the NYSDOT Right of Way. Should any disruptions of the existing Fiber Optic network be required due to the Design-Builders operations, a temporary communication system or bypass communication linked to the NYSDOT TMC shall be provided. None of the current functionality of the existing system may be lost or negatively affected by construction activities related to this Project.

Any disruptions to the existing system caused by the Design-Builder’s operations shall be repaired by the Design-Builder at no additional cost to the Department.

For the duration of this contract, the Design-Builder shall be responsible for all other work related to the ITS System within the Project limits.

14.2  STANDARDS

The Design-Builder shall perform ITS activities in accordance with the Contract Requirements, the applicable Standards, Design Codes and Manuals cited in Section 1.6, unless otherwise applicable to the Project.

14.3  REQUIREMENTS

14.3.1  Variable Message Sign (VMS)

Section Not Used.

14.3.2  Fiber Optic Backbone

Section Not Used.

14.3.3  Traffic Signal Interconnection

Section not used.

14.3.4  Temporary Wireless Radio and Antenna

Section not used.
14.3.5 Central Computer System at TMC

Section not used.

14.3.6 Electrical Work

Section not used.

14.3.7 Existing Cameras and Call Boxes

Existing CCTV camera and feed mounted on the poles as noted on the directive plans (conduits and wires) shall be removed and disposed.

Existing call boxes and solar panels noted on the directive plans shall be removed and reinstalled. The Design-Builder shall coordinate the removal and reinstallation of these devices with NYCDOT and John Ornas, 34-02 Queens Blvd. Long Island City, NY 11101, 212-839-3325.

14.4 SYSTEM TEST PROCEDURES

Section not used.

14.5 DOCUMENTATION REQUIREMENTS

Section not used.
SECTION 15  WORK ZONE TRAFFIC CONTROL AND ACCESS

15.1  SCOPE

The Design-Builder shall be responsible for the planning and provision of Work Zone Traffic Control (WZTC), required to perform the Project Work until Project Completion. This Project Requirement applies to any roads, ramps, cross roads, local streets, maintenance roads, driveways, and active paths within and/or affected by the Project.

The Design-Builder shall provide WZTC for the safe and efficient movement of people, goods, and services through the Project area(s) while maintaining access and minimizing negative impacts to residents, commuters, businesses, and NYSDOT maintenance operations.

Note that, as used in this section, “Work Zone Traffic Control plan” or “WZTC plan” is the equivalent of “Maintenance and Protection of Traffic plan” or “MPT plan” as described in Chapter 16 of the Highway Design Manual (HDM).

15.2  STANDARDS

The Design-Builder shall perform the work zone traffic control activities in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals listed in Section 1.6, unless otherwise stipulated in this Project Requirements, or otherwise applicable to the Project.

15.3  REQUIREMENTS

15.3.1  General Requirements

Work Zone Traffic Control shall be performed in accordance with this Part 3, Section 15 and the New York City Department of Transportation Bureau of Permit Management and Construction Control Work Permit (OCMC), dated May 8, 2017 included in Part 7 – Engineering Data. Any changes to the OCMC permit must be performed in coordination with NYSDOT, TBTA and NYCDOT. NYCDOT’s approval of any changes to the OCMC permit shall be obtained.

If any traffic signal timing needs to be adjusted as part of the WZTC Plan, the Design-Builder is responsible for coordinating with and obtaining approval from NYCDOT Traffic Signals.

Traffic Enforcement Agents shall be provided in accordance with the OCMC Permit and Special Specification 619.22970011.

It is the Department’s understanding that the Design-Builder’s Proposal may require work to be performed beyond the work limits shown in the Directive Plans to accommodate its solution. If that is the case, the Design-Builder shall restore any features disturbed beyond the work limits shown on the Directive Plans to its original form and function or better.

15.3.2  Work Zone Traffic Control Plan

The Design-Builder shall prepare and submit a WZTC Plan for managing traffic operations and controlling access until Project Completion. A WZTC Plan must be submitted in advance of any work that restricts the roadway cross section.

The WZTC Plan shall be submitted to the Department’s Design Quality Assurance Engineer a minimum of two weeks prior to initiation of any Work requiring a lane closure or the implementation of any change in traffic patterns.

The WZTC Plan shall include:
A) Contingency plans for reasonable unforeseen interruptions;
B) Duration of each WZTC stage, including duration of lane closure(s), if any;
C) Provisions for maintaining pedestrian traffic through the Project area at all times at all locations where pedestrian access through the Project area currently exists.

The Design-Builder shall notify local officials, and affected police jurisdictions to facilitate safe and effective enforcement. The WZTC Plan shall recognize the need for approval of the use of local public roads, if applicable.

The Design-Builder shall be responsible for updating the WZTC Plan as necessary throughout the Contract, so that at all times the current traffic control on site is representative of the design drawings that have been accepted by NYSDOT.

15.3.3 General Restrictions

Temporary lane closures shall be in accordance with the NYCDOT Work Permit stipulations included in Part 7 – Engineering Data.

A maximum 15 MPH reduction in the existing regulatory speed limit will be allowed for work zones, but not below 35 MPH. Any 15 MPH speed reduction must be accomplished in two steps of 10 MPH, maximum, i.e. 50 MPH to 40 MPH to 35 MPH.

Pinning of Temporary Concrete barrier to the new concrete deck is prohibited.

15.3.4 Access to Commercial Properties and Driveways

The Design-Builder shall provide uninterrupted access to all commercial properties and driveways within the Project Limits at all times.

15.3.5 Closure Restrictions

Closure Restrictions shall be as described in the NYCDOT Work Permit included in Part 7 – Engineering Data. For purposes of WZTC and Ramp Closures, Ramp SB and Ramp RC will be defined to begin at Bent 43. Additionally, a minimum lane drop taper may be installed North of bent 44.

Additional lane closure requirements for northbound ramps from the RFK Bridge, Ramps NX and ND reconstruction:

- For Ramp ND, maintain a minimum of one (1) lane open to traffic during months May 1 to November 1. Maintain a minimum of two (2) lanes open to traffic during other times of year.
- The Design-Builder will not be permitted to reduce traffic on both ramps simultaneously. Only one ramp superstructure may be worked on at a time and must be completed prior to commencing work on the 2nd ramp.

15.3.6 Minimum Lane Widths during Construction

The Design-Builder shall maintain a minimum travel lane width of 11 feet during construction and accommodate the Design Vehicle (WB-67) with a minimum 1’ offset from the vehicle to the concrete barrier on each side.

Minimum lane widths shall be in accordance with the NYCDOT Work Permit Stipulations included in Part 7 – Engineering Data.

15.3.7 Portable Variable Message Signs

The Design-Builder shall provide, Portable Variable Message Signs as required to satisfy the Design-Builder’s design, for the duration of the Contract. The Portable Variable Message Signs shall be deployed as necessary for the various WZTC schemes developed in coordination with, and with concurrence/acceptance from, the Department’s Project Manager. The portable variable message signs
provided shall meet the requirements of NYSDOT Item No. 619.110202 (Portable Variable Message Boards with Cellular Option).

The development of messages for the Variable Message Sign(s) shall be the responsibility of the Department’s CQAE and operations staff at the NYSDOT’s Transportation Management Center.

The Design-Builder shall contact the Department’s CQAE at least two weeks prior to placement of any Variable Message Sign regarding their location and receive concurrence of the location.

15.3.8  Temporary and Interim Pavement Markings

The Design-Builder shall provide temporary and interim pavement markings during all construction phases conforming to the requirements of the NYSDOT Standard Specifications.

15.3.9  Coordination with Regional Traffic Management Center

The Design-Builder is advised that the NYSDOT’s Traffic Management Center will provide support for the Project’s WZTC activities. Therefore, coordination among the Department’s Construction Quality Assurance Engineer, Design-Builder, and NYSDOT’s Traffic Management Center, will be required for all WZTC activities, particularly with respect to the use of Variable Message Signs (VMS) in the Project area.

The Design-Builder shall notify the Department’s Project Manager of all lane and/or shoulder closures prior to implementation.

15.3.10  Emergency Response and Transportation Management Plans

The Design-Builder shall notify the Department’s CQAE immediately following any impacts to motorists due to construction activities and/or unforeseen circumstances. The CQAE will be responsible for disseminating the information to the appropriate personnel/entities for appropriate response to mitigate impacts to motorists.

The Design-Builder shall prepare an Emergency Response Plan to be implemented in the event the roadway is shut down for unforeseen or unplanned circumstances. The Plan shall be implemented when the anticipated duration of closure exceeds twenty (20) minutes. The Plan shall be submitted to the Department’s Project Manager for review and comment a minimum of two weeks prior to the beginning of Work. Work on this Project shall not begin until the Design-Builder receives written notification from the Department’s Project Manager that the Emergency Response Plan has been reviewed by the Department and all Department comments have been resolved.

The Emergency Response Plan shall include a notification and communication plan that describes how the Design-Builder will promptly inform the appropriate personnel/entities of an unforeseen or unplanned circumstance. No later than 30 calendar days following NTP, the Department’s Project Manager will provide the Design-Builder with a list of personnel and entities that need to be contacted in this section of the Emergency Response Plan.

The Design-Builder shall also provide the Department’s Project Manager a Transportation Management Plan (TMP) per FHWA’s Final Rule on Work Zone Safety and Mobility, 23 CFR 630 Subpart J. The intent of the TMP is to minimize impacts to the travelling public and to provide continuity of reasonably safe and efficient road user flow and highway worker safety. The Emergency Response Plan shall be a component of the TMP and shall be located in the contingency section of the TMP.
15.3.11  Lifting Operations

The Design-Builder shall be aware that under no circumstances shall lifting operations for bridge superstructure elements, overhead sign structures, or any other items, be carried out over active traffic lanes. All such operations shall at a minimum require short-duration roadway closures in accordance with the provisions of this Section 15.
SECTION 16  PAVEMENT DESIGN AND CONSTRUCTION

16.1  SCOPE

The Design-Builder shall perform all Work necessary to provide all pavement required for the Project. This includes design, furnishing of materials, fabrication and construction of all temporary and permanent pavement for roadways within the Project Limits.

The Design-Builder shall be responsible for the review and approval of all submittals needed for the scope of work. The review and approval process shall be in conformance with the Design-Builder’s Quality Control Plan.

16.2  STANDARDS

The Design-Builder shall perform the pavement activities in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals listed in Section 1.6, unless otherwise stipulated in this Project Requirement, or otherwise applicable to the Project.

16.3  REQUIREMENTS

All pavement materials and construction methods shall be in accordance with the requirements of the NYSDOT Standard Specifications and the NYSDOT materials and pavement installation methods.

Limestone and/or dolomite, regardless of the acid insoluble residue content, shall not be allowed for Type 1 or F1 friction aggregate requirements.

If the existing roadway section at the limits of work varies from the standards applicable for new or resurfaced sections, the roadway features (lane & shoulder widths and cross slope) shall be transitioned to meet the existing conditions.

16.3.1  Full Depth Reconstruction

This section not used.

16.3.2  Milled and Resurfaced Roadways

The Design-Builder shall mill and resurface pavement areas as shown in the Part 6, Directive Plans and Indicative Plans and as necessary to provide for a smooth transition between the existing and fully reconstructed pavement surfaces in accordance with the applicable Standard Sheets. Existing pavement shall be milled down to the underlying Portland Cement Concrete Pavement. Repair underlying PCC pavement. Top Course shall be 1.5” in thickness, HMA 70 series in accordance with 402.127103. Binder Course shall be 2” in thickness, HMA Binder series in accordance with 402.257903.

Within the horizontal limits of any widened pavement section, the existing pavement shall be milled and resurfaced in conjunction with the top course placement for the widened section in order to provide a uniform pavement within the widened section of roadway.
16.3.3 Utility Trench Restoration

Outside areas of full depth reconstruction, pavements in trench restoration areas shall match the adjacent pavement section.
SECTION 17 DRAINAGE AND STORMWATER

17.1 SCOPE

The Design-Builder shall design and construct a drainage system as needed for the estimated storm runoff that provides functionality, durability, ease of maintenance, maintenance access, safety, and pleasant aesthetics.

The Design-Builder shall be responsible for the review and approval of all shop drawings needed for the scope of work. The review and approval process shall be in conformance with the Design-Builder’s Quality Control Plan.

Where drainage patterns will or must be changed from existing patterns, the Design-Builder shall be responsible for securing all necessary permits prior to construction of any drainage facilities.

Prior to Project Completion, the Design-Builder shall be responsible for cleaning all new and existing drainage facilities within the Project Limits.

17.2 STANDARDS

The Design-Builder shall perform the drainage and stormwater activities, including highway, bridge and site systems, in accordance with the Contract Requirements and the applicable Standards, Design Codes and Manuals listed in Section 1.6, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

Stormwater shall be conveyed from point to point through the use of a single pipe. Smaller pipes in parallel shall not be permitted.

17.3 REQUIREMENTS

The Design-Builder shall design and install all new scuppers and drain pipes leading to the existing catch basins at-grade. Downspouts shall not be directly connected to the existing catch basins; they discharge above the catch basin as illustrated in the Indicative Plans. If necessary to convey downspout discharge to the catch basin, the Design-Builder shall provide splash pads from the downspouts to the catch basins. Drainage piping shall be fiberglass and shall be colored to match the steel or concrete depending on the location of piping. All drainage shall be reviewed and approved by NYSDOT and NYCDEP. The contact person for NYCDEP is Mr. Guo Zhan Wu, P.E., 59-17 Junction Blvd. (3rd Floor/Low Rise), Flushing, NY 11373-5108.

17.3.1 Drainage Report

The Design-Builder shall provide a Drainage Report to the Department and any other entities whose facilities will be impacted by the Project in accordance with HDM Chapter 8. The Design-Builder shall be responsible for coordination in advance with any third party to determine the necessary document submission required by the third party. At least two weeks prior to providing documents to any third party, the Design-Builder shall submit a draft Drainage Report to the Department’s Design Quality Assurance Engineer for consultation and written comment.

The Drainage Report shall document the design criteria used, final design basis, and all supporting calculations and computer model output.
17.3.2 Connections to Existing Systems

The Design-Builder shall develop Design Plans and Project Specifications for any connections to existing storm systems. The Design-Builder shall be responsible for calculations performed to ensure there is sufficient capacity to accommodate any increase in flow due to changes in drainage catchment area and/or to land use. This paragraph shall not be construed to relieve the Design-Builder of the obligation to treat runoff water that requires treatment.

The Design-Builder shall clean the existing at-grade drainage system within the project limits to clear any obstructions. Additionally, where the proposed downspouts discharged above a drainage structure, the drainage structure shall be cleaned and the adjacent storm drain shall be cleaned to the nearest downstream manhole beyond the project limits.

The Design-Builder shall be responsible for video inspection of all existing drainage facilitates within the limits of construction. The inspection shall include all drainage facilities up to the nearest downstream manhole beyond the project limits.

17.3.3 Spill Management

Spill prevention and response measures shall be described in the SWPPP.

17.4 DELIVERABLES

Deliverables shall be as stated elsewhere in the RFP documents.
SECTION 18  HIGHWAY DESIGN

18.1  SCOPE

The Design-Builder shall be responsible for the design, construction and reconstruction of the permanent roadway(s) to be constructed within the Project Limits, and any other roads damaged by construction operations, or necessary for permanent operations, all in accordance with the design requirements stated herein. Highway design, construction and reconstruction shall be understood to include the design, furnishing, and construction of all road appurtenances, protections, and safety devices not specifically cited in other Project Requirements.

In addition, the Design-Builder shall be responsible for the removal of non-standard systems that currently exist within the Project limits, whether they are affected by the proposed work or not, and replacement with systems meeting current Department Standards, unless specified differently in the Project Requirements Sections 1-17 and 19-20.

18.2  STANDARDS

The Design-Builder shall perform the Work in accordance with the Contract Documents and the Applicable Standards, Design Codes and Manuals listed in Section 1.6, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

18.3  REQUIREMENTS

18.3.1  General

The Design-Builder shall be responsible for performing the detailed highway design and construction within the Project Limits in accordance with the Project Requirements set forth herein.

18.3.2  Design Requirements

Design requirements for the reconstruction of the Bridges are provided in Part 7, Engineering Data. Design requirements for the lane widths and shoulder widths are provided in the Directive Plans in Part 6, RFP Plans. The superelevations for Ramp NB and Ramp SB shall be 6.25% and 6.43% respectively.

18.3.3  Barrier Systems and Impact Attenuators

The Design-Builder shall remove and dispose of all existing barrier systems and/or impact attenuators within the Project limits, and replace with new barrier systems and/or impact attenuators to current NYSDOT Standards.

The Design-Builder shall remove and dispose of all existing guide rails along the at-grade section as shown in the Directive Plans included in Part 6 – RFP Plans, and replace with new guide rails to current NYCDOT standards.

The limits of work for new roadside and new median barrier shall be the lesser of the following:

1) The point where barrier is no longer warranted; or

2) A point where the proposed barrier can be transitioned to an existing barrier system which conforms to current standards.

All existing barrier systems that are removed shall become property of the Design-Builder.
The following impact attenuators shall be used:

1. Expendable Impact Attenuators:
   - QuadGuard Standard – Narrow and Wide Hazards (TL2 & TL3).
   - QuadGuard Non-Standard – Narrow and Wide Hazards (TL2 & TL3).
   - QuadGuard II – Narrow and Wide Hazard (TL2 & TL3).
   - TAU II – 24” to 102” Backstop Widths (TL2 & TL3).

2. Reusable Impact Attenuators:
   - REACT-350 standard 36” width (TL2 & TL3) (Can be customized to accommodate wider width hazards ).
   - SCI – 70GM and 100GM (TL2 & TL3, respectively) (24” to 30” standard and 36” to 60” custom Backstop/ Transitions).
     The SCI is preferred over the REACT 350.

3. Inertial Barrel Modules/ Sand Barrels:
   - Energite III - Universal Module System only. (Arrays based on Design Velocity and Hazard Width ).

18.3.4 Clear zone

The Design–Builder shall document clear zone on the final record plans.

18.4 DESIGN EXCEPTIONS AND NON-STANDARD FEATURES

It is the responsibility of the Design-Builder, in coordination with the Department, to obtain acceptance of any non-standard features included in the final design. Non-standard features that have previously been approved in the Design Approval Document, and are included in Part 7, Engineering Data, do not need to be submitted for approval. The approved non-standard value shall be adhered to.
SECTION 19  STANDARDS

19.1  GENERAL REQUIREMENTS

The Design-Builder shall identify the specific version of each Standard it uses. It is the Design-Builder’s responsibility to obtain clarification of any apparent error, omission, ambiguity or conflict regarding any Standard in accordance with DB §102-2.

19.2  SPECIFIC REQUIREMENTS

The Design-Builder shall assume that all provisions of the Standards, including the figures and tables, are mandatory and guidelines contained therein shall be assumed to be requirements. All words such as “should,” “may,” “must,” “might,” “could,” and “can” shall mean “shall” unless the context requires otherwise, as determined in the sole discretion of the Department. It shall be in the Department’s sole discretion to determine when the context does not require a provision to be mandatory.

Except as expressly otherwise provided in the Contract Documents, any reference to NYSDOT under a Standard shall mean the Department.

When a Standard refers to an action being necessary, needed, or recommended, the Design-Builder shall construe the action as required unless the context requires otherwise, as determined in the sole discretion of the Department.

Where reference is made in the Standards to items that are indicated in the plans or special provisions or required in the plans or special provisions, the plans or special provisions shall mean the Design-Builder’s Plans or the Special Provisions.

References in the Standards to approved products or materials shall mean approved by the Department.

All references in the Standards to the inspector, the field inspector, the project engineer, the engineer, the materials engineer, the district materials engineer, the survey crew, the project supervisor, the agency certified technician, the certified plant technician, and the representative of the Office of Materials shall mean the Design-Builder, except as otherwise expressly provided in the Contract Documents or otherwise directed by the Department.

When a Standard refers to an approval of any correction or repair that deviates from the Contract requirements, the Acceptance must be by the Department.

When a Standard refers to items that will be performed or provided by NYSDOT or by a division or employee of NYSDOT, the Design-Builder shall construe the requirements as applying to the Design-Builder unless otherwise specified in the Contract Documents, or unless the context requires otherwise. It shall be in the Department’s sole discretion to determine when the context requires otherwise.
SECTION 20  SECURITY
Section not used.