ROUTE 17 AT ROUTE 32 (EXIT 131) RECONSTRUCTION

PIN 8006.84, Contract D900038

DB CONTRACT DOCUMENTS

PART 3

PROJECT REQUIREMENTS

Addendum #10 August 29, 2017
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**New York State Department of Transportation**

**Route 17 at Route 32 (Exit 131) Reconstruction**

**PIN 8006.84, Contract D900038**

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**Part 3 - Project Requirements**

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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issued by the Office of Engineering, current as of the date of Proposal submission, excluding Section 100, which is superseded by Part 2, Section DB 100 of the Contract Documents, and except as otherwise noted in these Contract Documents.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 north-south corridor (Route 17 / Route 32) shall be referred to as Route 32 in the Proposal language. It shall be noted that the official New York State Route number changes to Route 17 south of the eastbound Route 17 (Future I-86) off-ramps.

The east-west corridor shall be referred to as Route 17 (Future I-86) in the Proposal language. It shall be noted that Route 17 overlaps with US Route 6 west of Exit 130A and becomes NYS Route 984C from Route 32 to the New York State Thruway Authority Harriman Toll Plaza.

The project will include the reconstruction of the Route 17 at Route 32 (Exit 131) interchange to meet Interstate standards. The scope includes construction of a grade separated access point
to and from Woodbury Common Premium Outlet, reconstruction of Exit 131 eastbound ramp system, reconstruction of Nininger Road (CR 64) and the Exit 131 westbound ramp system, reconstruction of Route 17 (Future I-86) from US Route 6 (Exit 130A) to the Harriman Toll Plaza, replacement of BIN 1003340, increasing clearance under BIN 1077100 to Interstate standards, reconstruction/resurfacing of Route 32 from Commerce Drive to a point approximately 500 feet north of the intersection with Buena Vista Terrace, and internal roadway improvements to the Monroe-Woodbury Central School District campus.

Active Traffic Management practices shall be incorporated into the design to optimize operational efficiency and minimize roadway footprint. At a minimum, the project shall include Adaptive Signal Control Technology (ASCT) for the entire length of the Route 32 corridor. All off-peak traffic data collection required for the design and optimization of the ASCT shall be the responsibility of the Design-Builder.

The Project scope of work will include but is not limited to the following:

A) Reconstruction of mainline Route 17 to meet Interstate standards and provide for the future addition of a third thru lane in each direction;

B) Increasing vertical clearance under BIN 1077100 to meet Interstate standards;

C) Reconstruction of Route 17 at Exit 131 interchange;

D) Improve Route 17 at Exit 130A (Ramp B) auxiliary lane to meet Interstate standards;

E) Replace BIN 1003340 with new structure that provides Interstate vertical clearance for Route 17/Route 984C below and the required width for capacity improvements on Route 32;

F) Reconstruction and widening of the north-south Route 32/Route 17 corridor. Including installation of new traffic signals equiped with Adaptive Signal Control Technology (ASCT);

G) Maximize corridor and signalized intersection operations on Route 32 and Route 17;

H) Minimize the overall roadway footprints and maximize overall traffic operation utilizing Adaptive Signal Control Technology (ASCT), or other available technologies, to the extent practical;

I) Remove and replace all sign structures on Route 17, Route 32 and Ramps within the project limits.

J) Install new and upgrade existing pedestrian facilities along Route 32/Route 17 corridor;

K) Rehabilitation and or reconstruction of pavement within the project limits

L) Construction of grade separated access to/from Woodbury Common Premium Outlet;

M) Internal roadway construction at Monroe-Woodbury Central School District;
N) Utility coordination and relocation, including electrical transmission line relocation;

O) Reconstruction of Park and Ride facilities and installation of energy efficient, “Green” Bus Shelter(s).

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:** TANY 17-38/AETC Conversion of Harriman Toll Plaza  
**WZTC:** Stage construction with traffic shifts.  
**Current schedule:** November 15, 2019 completion  
**Contractor:** TBD  
**Contact Information:** Bob Cournoyer, Project Manager, cournoyer@thruway.state.ny.us  
**Brief Project Description:** Reconstruction of the Harriman Toll Plaza at Route 17 (Future I-86). The project will consist of replacing the existing toll plaza with a “cash-less” tolling system.

**PIN/Description:** Central Valley Elementary School Electrical Service Upgrades  
**WZTC:** Possible shoulder closure along southbound Route 32 during overhead utility work. Coordinate with D900038 work at Central Valley North driveway and internal roadway and parking improvements.  
**Current schedule:** Summer 2018  
**Contractor:** TBD  
**Contact Information:** Patrick Cahill, Director - Monroe-Woodbury Central School District Business Office, pcahill@mw.k12.ny.us  
**Brief Project Description:** Electrical Service Upgrade to Central Valley Elementary School. New underground electrical service lines are to be installed from the service connection at the intersection of Central Valley North driveway and NY Route 32 to two points along the back of the school. Plans have been posted as a reference document.

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

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
• FHWA HI-99-007 Rock Slopes Reference Manual
• 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
• Policy on Access to the Interstate System

NFPA:
• NFPA 70 – National Electrical Code (NEC)
• 502: Standard for Road Tunnels, Bridges, and Other Limited Access Highways
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
- New York State Supplement to the Manual on Uniform Traffic Control Devices
- Overhead Sign Structure Design Manual
- Policy and Standards for the Design of Entrances to State Highways
- Policy on Highway Lighting
- Prestressed Concrete Construction Manual (PCCM)
- Project Development Manual
- Reference Marker Manual
- Rules and Regulations Governing the Accommodation of Utilities within the State Highway Right of Way
The above is a partial listing of applicable NYSDOT Engineering Manuals and Guidelines. The Design-Builder shall perform the Work in conformance with all NYSDOT Engineering Manuals and Guidelines in effect on the Proposal due date.

NYSED:
- Commissioner’s Regulations 155.5 Uniform Safety Standards for School Construction and Maintenance Projects

OSHA:
- PART 1926 - Safety And Health Regulations For Construction

SPC:
- Society of Protective Coatings Standards

USDOJ:
- ADA Accessibility Guidelines for Buildings and Facilities

USDOT:
- ADA Standards for Transportation Facilities

1.7 REQUIREMENTS

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 November 15, 2019.

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.
### WORK PAYMENT SCHEDULE

<table>
<thead>
<tr>
<th>WORK ITEM</th>
<th>MAXIMUM PERCENT OF LUMP SUM PRICE</th>
<th>PERCENT OF LUMP SUM PRICE (To be completed by D-B)¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Zone Traffic Control</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Demolition and Removal of Existing Bridge Elements</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Construct Pier and Abutment Foundations</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Fabricate and Install Bearings and Superstructure</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Construct Reinforced Concrete Bridge Deck Slab, Sidewalk and Curbs</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Construct Drainage System</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Construction of Earthwork and Embankment</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Construction of Retaining Wall Structures</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Construction/Reconstruction of Roadways, including curbs, shoulders and/or a sidewalks</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Fabricate and Install Signals</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Install ITS Elements</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Fabricate and Install Roadway Lighting and Signage</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Install Underground Electric Transmission Conduit and Manholes</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Fabricate and Install Rail, Approach Guide Railing, Barrier and Fencing</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Construction of Wetland Mitigation</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Construction of Stormwater Management</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Construction of Landscaping</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Punch list work, Site Cleanup and Restoration</td>
<td>2% (fixed)</td>
<td>2%</td>
</tr>
<tr>
<td>Final Acceptance (Per DB §109-12.1)</td>
<td>1% (fixed)</td>
<td>1%</td>
</tr>
<tr>
<td>Final Agreement (Per DB §109-12.2)</td>
<td>2% (fixed)</td>
<td>2%</td>
</tr>
</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 10 years but preferably 15 years of demonstrated experience in construction and construction management of bridge and/or transportation and/or 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 and highway infrastructure construction project having a construction value in excess of $50,000,000. 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 75% 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 10 years demonstrated experience in managing design for bridge and highway infrastructure 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 50% of their work time to this project.

C) **Quality Manager**: Shall have demonstrated experience in bridge and highway design and 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 can hold only this one Key Personnel position. The Quality Manager should 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 75% 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.

E) **Resource Provider**: Should have a minimum of 10, but preferably 15, years of demonstrated construction experience in civil works projects with experience in managing the site work of complex transportation infrastructure projects with preferably similar size and type of work as this Project, and preferably including projects with compressed timelines, and community information requirements. Experience should include work of the nature anticipated in this Project, and should include Design-Build contracts. The Resource Provider should dedicate no less than 50% of their work time to this Project. This individual shall have the authority and expertise needed to move personnel, resources, and equipment to implement recovery actions that may be required due to any unanticipated delays in the Project schedule.

F) **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.

G) **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.

H) **Lead Traffic Engineer**: Shall be licensed and currently registered as a Professional Engineer in the State of New York and shall have at
least 5 years experience with Adaptive Signal Control Technology (ASCT),

I) **Lead Geotechnical Engineer:** Shall be licensed and currently registered as a Professional Engineer in the State of New York and shall have a minimum of 10, but preferably 15, years of experience which should include the following: planning and overseeing subsurface exploration programs for highway structures/facilities; the development of design soil/rock profiles, for the purpose of geotechnical analysis, design, and construction; design of structure foundations and earth support structures; analysis and design for static and dynamic (seismic) loading under current LRFD; analysis and design of mitigation measures for embankment settlement and stability; analysis and design of both temporary and permanent earth support structures; and interpreting geotechnical instrumentation programs.

J) **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 $50M or more.

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>
</tr>
</thead>
<tbody>
<tr>
<td>Workforce Participation Plan</td>
<td>DB § 102-9.4B</td>
<td>No</td>
<td>60 Days after NTP</td>
</tr>
<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</td>
<td>No</td>
<td>30 Days after NTP</td>
</tr>
</tbody>
</table>
Section 2.3.6

<table>
<thead>
<tr>
<th>Plan/Plan</th>
<th>Project Requirements</th>
<th>No/Yes</th>
<th>Days after NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Management Plan</td>
<td>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>
</tr>
<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>
</tr>
<tr>
<td>Initial Baseline Progress Schedule</td>
<td>Project Requirements Section 2.4</td>
<td>Yes</td>
<td>15 Days after NTP</td>
</tr>
<tr>
<td>Public Notification Plan</td>
<td>Part 3, Section 7.3.2</td>
<td>No</td>
<td>30-60 Days after NTP</td>
</tr>
<tr>
<td>Geotechnical Work Plan</td>
<td>Part 3, Section 9.3.1</td>
<td>No</td>
<td>60 Days after NTP</td>
</tr>
</tbody>
</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-Builders 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 Non-Type II Action in accordance with 17 NYCRR, Part 15. No further SEQRA processing is required.

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.

It is advisable that the Design-Builder hold a pre-application meeting with NYSDEC and coordinate with NYCDEP, as appropriate, within 60 days from NTP.

The Design-Builder may request a review by the Department of any permit/approval applications which must be submitted to third parties. For any such review requested, the Design-Builder shall allot five (5) business days for the Department to review and comment on the completeness and adequacy of the application materials. It shall then be the Design-Builder’s discretion to address any Department comments or elect to move forward with the application materials as submitted.

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; The Design-Builder shall be solely responsible for compliance with and violations of any Environmental Requirements; and

C) 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.

D) The Design-Builder shall provide a copy of all environmental permit applications and secured approvals to the Department's Project Manager.

E) Wetland Delineation

A Wetland Delineation Report, dated December 2008, was completed for the project and is provided as a Reference Document. A jurisdictional determination was never obtained for the boundaries presented in the 2008 Report. The wetland boundaries shall be confirmed and the delineation report refreshed for the purposes of environmental permit application(s). Revisions to the Report shall be conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. The Design-Builder should schedule an onsite meeting with the US Army Corp of Engineers to verify wetland boundaries.

F) United States Army Corps of Engineers Coordination

Fills and other demolition and construction activities in and adjacent to waters of the US necessary for completion of this project are subject to Sections 401 and 404 of the Federal Clean Water Act. The United States Army Corps of Engineers (USACE) is the agency responsible for enforcement of these regulations and as such will be closely coordinated with for all Project activities.

It is anticipated that USACE Nationwide or Individual permits will be required for any potential permanent or temporary impacts to the bed and banks at or below the Ordinary High Water (OHW) level of streams in this Project, as well as permanent or temporary impacts to any wetland areas. Should the Design-Builder propose impacts to waters of the US, the Design-Builder is responsible for obtaining any necessary permits from the USACE,
in coordination with the Department. The Department will not be responsible for any delays related to permitting.

The Design-Builder shall assume that the regulatory timeframe for issuance of a permit from the USACE includes the following:

1. Approximately 30 calendar days for a review of the permit application and request for further information, if needed;

2. Approximately 45 calendar days for final authorization after a complete application for a Nationwide Permit has been received by the USACE; and

3. Approximately 120 days for final authorization after a complete application for an Individual Permit has been received by the USACE.

The Design-Builder is responsible for addressing any and all comments that the USACE may have on the Design-Builder’s permit application. Any time spent by the Design-Builder in responding to comments by the USACE is not included in the above permitting timeframe.

The Design-Builder shall assume that the USACE will require that all correspondence between the USACE and the Design-Builder be sent through the Department and that the Department will take five (5) business days to transmit the correspondence.

G) Previously Constructed Wetland Mitigation Sites

The approximate boundaries of previously constructed wetland mitigation sites are provided as contract reference documents. These areas shall be considered federal jurisdictional wetlands, regardless of whether they meet wetland soils, vegetation and hydrology criteria. Any impacts to these previously constructed wetland mitigation sites will require compensatory mitigation. Project-specific compensatory mitigation ratios are at the discretion of the USACE New York District. Based on previous Department experience, ratios for impacts to previously constructed wetland mitigation sites may be greater than 2:1.

H) Compensatory Wetland Mitigation

As part of the USACE coordination detailed above, compensatory mitigation at a minimum 1:1 ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification or an individual permit. Project-specific compensatory mitigation ratios are at the discretion of the USACE New York District. Based on previous Department experience, ratios for impacts to natural wetlands may be greater than 1:1.

There is limited right-of-way available for compensatory wetland mitigation within the Project boundaries; therefore all mitigation is required to be off-site as described below. Approvals have been secured from USACE and Palisades Interstate Park Commission to perform off-site mitigation at the abandoned Silver Mine Lake parking lot along Seven Lakes Drive in Harriman State Park. A location map is located in Part 7 – Engineering Data. 3.5 acres has been dedicated for purposes of wetland mitigation. Based on the environmental approval document, this area should be sufficient to satisfy all mitigation requirements. However, the Design-builder is responsible for determining the final size of the mitigation site based on their proposed solution. The Design-Builder shall be responsible for preparing all permit application materials and obtaining all final permit approvals.
The removal of the parking lot shall include enough area to establish the necessary wetland mitigation including adjacent upland slopes and access for maintenance. Adjacent upland side slopes surrounding the wetland mitigation site shall be no steeper than 3 horizontal on 1 vertical. The existing parking lot shall be excavated to an elevation that is approximately equal to the elevation of the adjacent existing wetland and/or the elevation of the ordinary high water mark of the adjacent stream that borders the parking lot. The wetland mitigation site shall use wetland topsoil for the top 8” of topsoil. The wetland mitigation site shall be seeded using a wetland seed mix with wetland plant species that native to the northeast United States. In addition to seeding the wetland mitigation site shall be planted with nursery stock native wetland plant species at the following densities:

Emergent Wetland Mitigation:
   Herbaceous species: 3’ on center (o.c.)

Scrub / Shrub Wetland Mitigation:
   Shrub species: 7’ o.c.
   Herbaceous species: 850 plants per acre, spaced between 3’ o.c. and 8’ o.c. scattered in understory.

Forested Wetland Mitigation:
   Tree species: 10’ o.c.
   Shrub species: In groups at 6’ o.c.
   Herbaceous species: In groups at 6’ o.c.

The existing parking lot access road is currently blocked by boulders. The access road shall be left in place for future maintenance needs. The boulders maybe removed for construction access but shall be replaced following construction completion.

A 26 ft wide strip of the existing parking lot pavement shall be left in place for the access road from Seven Lakes Parkway back to the wetland mitigation area. The edge of the access road shall be sawcut, all remaining pavement removed, and the area seeded.

I) NYSDEC Article 15 – Streams

For any locations involving work in or within 50 feet of a stream, compliance with the NYSDEC-NYSDOT Memorandum of Understanding (MOU) regarding Environmental Conservation Law Articles 15 and 24 is required. The MOU is provided as a Reference Document.

In-water work must occur between the allowable work periods listed in Table 3-1, NYSDEC Article 15 Stream Classifications and Allowable Work Periods, unless waived in writing by the NYSDEC.

Table 3-1 – NYSDEC Article 15 Stream Classifications and Allowable Work Periods

<table>
<thead>
<tr>
<th>BIN</th>
<th>Road</th>
<th>Stream/Feature crossed</th>
<th>Classification</th>
<th>Allowable Work Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>Silver Mine Lake Parking Lot on Seven Lakes Parkway (off-site mitigation area)</td>
<td>Lewis Brook</td>
<td>Class A, Standard A(T)</td>
<td>May 1 – September 30</td>
</tr>
</tbody>
</table>
J) Noise Requirements

The Design-Builder shall comply with the noise restrictions shown below. The noise requirements apply to three distinct zones depicted on map found in Part 7.

Table 3-2a – Construction Activities - Zone S (School)

<table>
<thead>
<tr>
<th>Construction Device/Activity</th>
<th>Day Time (0700 to 1500)</th>
<th>Evening Time (1500 to 2000)</th>
<th>Night Time (2000 to 0700)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact Equipment: Pile Drivers, Jackhammers, Hoe Rams, etc.</td>
<td>Not Allowed</td>
<td>Allowed</td>
<td>Allowed</td>
</tr>
<tr>
<td>Blasting</td>
<td>Not Allowed</td>
<td>Allowed</td>
<td>Allowed</td>
</tr>
<tr>
<td>Earth Moving Equipment: Excavators, Dump Trucks, etc.</td>
<td>Allowed/ No Slamming</td>
<td>Allowed</td>
<td>Allowed</td>
</tr>
</tbody>
</table>

- The Noise requirements in Zone S are based on the School year calendar. It shall be noted that these requirements also apply to any School summer programs or events.

Table 3-2b – Construction Activities - Zone R (Residential)

<table>
<thead>
<tr>
<th>Construction Device/Activity</th>
<th>Day Time (0700 to 1600)</th>
<th>Evening Time (1600 to 2100)</th>
<th>Night Time (2100 to 0700)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact Equipment: Pile Drivers, Jackhammers, Hoe Rams, etc.</td>
<td>Allowed</td>
<td>Not Allowed</td>
<td>Not Allowed</td>
</tr>
<tr>
<td>Blasting</td>
<td>Allowed</td>
<td>Not Allowed</td>
<td>Not Allowed</td>
</tr>
<tr>
<td>Earth Moving Equipment: Excavators, Dump Trucks, etc.</td>
<td>Allowed</td>
<td>Allowed</td>
<td>Not Allowed</td>
</tr>
</tbody>
</table>

Table 3-2c – Construction Activities - Zone C (Commercial)

<table>
<thead>
<tr>
<th>Construction Device/Activity</th>
<th>Day Time (0900 to 2100)</th>
<th>Evening Time (N/A)</th>
<th>Night Time (2100 to 0900)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact Equipment: Pile Drivers, Jackhammers, Hoe Rams, etc.</td>
<td>Allowed</td>
<td>--</td>
<td>Allowed</td>
</tr>
<tr>
<td>Blasting</td>
<td>Allowed</td>
<td>--</td>
<td>Allowed</td>
</tr>
<tr>
<td>Earth Moving Equipment: Excavators, Dump Trucks, etc.</td>
<td>Allowed</td>
<td>--</td>
<td>Allowed</td>
</tr>
</tbody>
</table>

3.3.2 Environmental Plans

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

A) State Pollutant Discharge Elimination System (SPDES) Permit application; see Soil Erosion and Water Pollution Control;
B) Stormwater Pollution Prevention Plan (SWPPP).

3.3.3 Soil Erosion and Water Pollution Control

The Design-Builder shall prepare and maintain on file a SWPPP complying with the New York State SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-15-002 or current version). The SWPPP is to include but is not limited to construction entrance(s), construction phasing, drawings showing size and location of permanent (e.g., swales, check dams, etc.) and temporary (e.g., silt fence, temporary seed, mulch, etc.) erosion controls, and details. The SWPPP shall include plans and details for water quality volume, runoff reduction volume, stream channel protection, overbank flood, and extreme flood controls, as appropriate. The Design-Builder shall apply for coverage under the SPDES General Permit for Stormwater Discharges from Construction Activities after preparing a compliant Erosion Control Plan and SWPPP as noted. The Design-Builder shall prepare the final SWPPP and a conforming Notice of Intent (NOI), sign/complete the Contractor/Subcontractor SPDES Permit Certification form (CONR 5), and submit the NOI to NYSDEC for approval. Discharges covered under the SPDES general permit shall not commence until the date authorized on the SPDES Acknowledgement Letter from NYSDEC. Stormwater management practices and SWPPP are not required to be designed/constructed for the future additional third Eastbound and Westbound lanes of Route 17.

3.3.4 Threatened And Endangered Species Coordination

The Design-Builder shall be aware that the northern long-eared bat (NLEB) is listed as a threatened species under the Endangered Species Act of 1973. Under consultation procedures, the Department contacted the US Fish and Wildlife Service (USFWS) regarding any potential measures to minimize harm to NLEBs due to the proposed tree removals. To avoid adverse effects on the NLEB, removal of 7.7 acres of potential habitat (trees) is authorized, and may only occur during the NLEB hibernation period between November 1st and March 31st. Tree clearing on school property shall be done on Saturdays and Sundays between the hours of 0700Hrs to 1600 Hrs during the first winter season. In addition, a determined number of replacement trees shall be planted upon completion of the bridge replacement work. See Section 11 for replacement conditions.

Since the project involves bridge work between the dates of April 1 and September 30, a Bridge/Bat Survey Form shall be completed by the Design-Builder for each existing bridge structure that work will be performed on within one year prior to the start of the bridge work. As long as the survey concludes that there are no signs of bats, then the “May Affect, not likely to Adversely Affect” determination remains valid. If the presence of bats is found, no construction work on the bridge can begin until: confirmation of the species is determined by USFWS and clearance is obtained by USFWS before work can begin on the bridge per Bridge/Bar Survey Form guidance. A blank copy of the form is provided as a Reference Document. The completed form shall be provided to the Department Project Manager prior to the start of bridge work.

In addition, should the Design-Builder require the removal of more than 7.7 acres of trees (3” or greater diameter at breast height (DBH)), or should any removals be required after March 31st and before November 1st, the Design-Builder shall be responsible for coordinating with the Department and provide the necessary information to obtain necessary approvals from the USFWS and FHWA.

Small Whorled Pogonia Potential Habitat Area

The Department has committed to avoiding an area within the Project limits that contains suitable habitat for small whorled pogonia, a federally-protected plant species. A map depicting
the avoidance area is provided as a Reference Document. If during detailed design and/or construction the Design-Builder determines that impacts to this area are unavoidable, the Design-Builder shall be responsible for coordinating with the Department and provide the necessary information to obtain necessary approvals from the USFWS and FHWA prior to proceeding with construction.

3.3.5 Asbestos Containing Materials

An Asbestos Screening and Assessment of the impacted right-of-way and structures was performed by a NYS Department of Labor licensed firm using certified inspection staff. Asbestos Containing Materials (ACMs) identified during this screening/assessment were sampled and positively analyzed for asbestos content; suspect asbestos-containing materials are presumed positive. The complete Asbestos Containing Material Survey and Design Report, dated MMMM 20YY, is located in Part 7 – Engineering Data.

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 1 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 Sidewalk Plowing Coordination During Winter Shutdown

Prior to the end of the construction season, the Design-Builder shall provide the State a list of new sidewalks that are open to the public that will need to be plowed by the municipality during the winter months. Before winter shutdown, the Design-Builder shall ensure that all sidewalks are free and clear of obstructions, barricades, fixed objects, etc. that would interfere with the snow plowing effort.
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

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 State owned Right-of-Way (ROW) are included in the Reference Documents. The Design-Builder shall perform all the permanent Project Work within the existing State owned ROW and any additional ROW that has been, or will be, obtained for the Project.

Maps for any Right-of-Way that is in the process of being obtained or has been obtained specifically for this Project are included in Part 7 – Engineering Data of these Contract Documents. See Table 6-1 ROW Acquisition Status below for anticipated availability.

Table 6-1 – ROW Acquisition Status

<table>
<thead>
<tr>
<th>Owner</th>
<th>State Hwy. No.</th>
<th>Map</th>
<th>Parcel</th>
<th>Type</th>
<th>Status</th>
<th>Anticipated availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodbury Centre Harriman, LLC</td>
<td>115</td>
<td>44</td>
<td>65</td>
<td>PE</td>
<td>Vested</td>
<td>November 28, 2017</td>
</tr>
<tr>
<td>Woodbury Centre Harriman, LLC</td>
<td>115</td>
<td>45</td>
<td>66</td>
<td>TE</td>
<td>In process</td>
<td>November 28, 2017</td>
</tr>
<tr>
<td>Harriman Motor Fuel, Inc</td>
<td>115</td>
<td>46</td>
<td>67</td>
<td>FEE W/OA</td>
<td>Vested</td>
<td>November 28, 2017</td>
</tr>
<tr>
<td>Harriman Motor Fuel, Inc</td>
<td>115</td>
<td>47</td>
<td>68</td>
<td>TE</td>
<td>Vested</td>
<td>November 28, 2017</td>
</tr>
<tr>
<td>Harriman Motor Fuel, Inc</td>
<td>115</td>
<td>48</td>
<td>69</td>
<td>PE</td>
<td>Available</td>
<td></td>
</tr>
<tr>
<td>Cabelas Wholesale, Inc</td>
<td>115</td>
<td>49</td>
<td>71</td>
<td>FEE W/OA</td>
<td>Available</td>
<td></td>
</tr>
<tr>
<td>Chelsea GCA Realty Partnership</td>
<td>115</td>
<td>50</td>
<td>72, 73, 78, 87, 90</td>
<td>FEE PE</td>
<td>In process</td>
<td>November 28, 2017</td>
</tr>
<tr>
<td>Chelsea GCA Realty Partnership</td>
<td>115</td>
<td>51</td>
<td>74</td>
<td>TE</td>
<td>In Process</td>
<td>November 28, 2017</td>
</tr>
<tr>
<td>Bed of Road</td>
<td>115</td>
<td>52</td>
<td>75</td>
<td>FEE</td>
<td>In Process</td>
<td>November 28, 2017</td>
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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.

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

The Design-Builder shall monument all Permanent Easements and FEE acquisitions with low type concrete monuments in accordance with the NYSDOT Highway Design Manual and NYSDOT ROW Mapping Procedure Manual.
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, accurate and continuous information throughout the design and construction process. The Design-Builder shall be responsible for supporting and cooperating with the Department with 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. The Department logo shall be used on all materials prepared for public use; the Design Builder’s and subcontractor’s logos shall not appear on public communications materials.

7.3 REQUIREMENTS

7.3.1 Community Relations Specialist and Office

The Design-Builder shall have a Community Relations Specialist on staff and made available to the Department, community and businesses. The Community Relations Specialist shall be directly responsible to the Design-Builder's Project Manager. The Design-Builder's Project Manager will provide the Community Relations Specialist accurate, timely information regarding all project construction activities. The Design-Builder shall employ an individual with a minimum of 5 years of experience in public involvement, landowner coordination, and community relations as part of major highway projects. The Community Relations Specialist shall be capable and qualified to perform the following types of functions and activities:

- Develop effective public notification plans and implement all aspects of the plans successfully.
- Meet with business and property owners to collaborate on site-specific effects of the Project and abate the Project impacts.
- Meet and inform community groups, business owners/associations, and general public of Project activities.
- Develop and disseminate Project information regularly to elected officials, emergency service providers, community groups, business owners/association and the general public.

The Community Relations Specialist Office shall be located within the Project area and staffed Monday through Friday during normal business hours and four hours on Saturdays. The office may be co-located with other Design-Builder offices. The Community Relations Specialist shall be staffed for the duration of the project.

7.3.2 Public Notification Plan, Stakeholder Coordination Meetings and General Outreach Activities

The Design-Builder shall have the primary responsibility for assisting the Department in developing and implementing of the Public Notification Plan (PNP); assisting in identifying Project stakeholders; assisting in the logistics for holding coordination stakeholder meetings; and assisting in providing on-going outreach activities for the Project. All stakeholder
coordination meetings and outreach efforts shall be coordinated with the Department’s Project Manager (PM). The Department’s PM shall be the lead at all public notification and/or stakeholder meetings and therefore shall be in attendance at all public stakeholder coordination meetings and public meetings. All public communication activities must be reviewed and approved by the Department’s PM. The documentation of all stakeholder coordination meetings and public meetings shall be the responsibility of the Design-Builder.

Public Notification Plans:

The Design-Builder shall assist in developing a Project Notification Plan (PNP) which shall involve the inclusion of all the requirements listed in this Section 7. The PNP shall include a chronological list of public involvements tasks, detailed description of tasks, responsible parties, and tentative dates for the execution of each task. The PNP will serve as a living document and updated regularly by the Department with assistance from the Design-Builder.

The Design-Builder shall submit an initial draft PNP for review by the Department’s PM. The PNP shall be submitted to the Department for review within 30 – 60 days from NTP. The PNP shall be developed using the timeframes provided below.

Stakeholder Coordination Meetings:

- **TMC, Municipal Officials & Emergency Services Coordination Meetings**: The Design-Builder shall be responsible for scheduling, in close coordination with the Department’s PM, these meetings and preparing meeting materials for municipal officials and emergency services coordination meetings at least twelve weeks prior to implementing Work Zone Traffic Controls and/or the start of significant construction activities. The results of these meetings need to be coordinated, as specified by the Department’s PM, by the Design-Builder with the Department’s Regional Transportation Management Center (TMC). A series of coordination meetings will be required.

- **Public Information Meetings**: Two evening, public information meetings will be held. One meeting at the beginning of the first construction season and the second public information meeting will be held at the beginning of the second construction season. The Design-Builder shall be responsible for scheduling the public information meetings, in close coordination with the Department’s PM, and preparing presentation materials to inform the general public of associated construction activities and the intended construction schedules. The public information meetings shall be held four weeks prior to implementing work zone traffic controls and/or the start of significant construction activities. The Design-Builder will be responsible for securing an appropriate meeting location, scheduling a date, and inviting the public, including key Project stakeholders.

The public information meetings may include PowerPoint presentations, informal discussion about the planned work, and upcoming construction activities, Work Zone Traffic Control, traffic detours, anticipated construction impacts, and Project schedule. Design-Builder is responsible for preparing all meeting handouts, PowerPoint presentations, and displays.

The Design-Builder and the Department PM, Regional Public Information Officer (PIO) and Regional Public Involvement Coordinator (RPIC) shall meet at the Poughkeepsie State Office Building at least two week in advance of any public information meetings to review draft agenda, discuss meeting materials needs, and review logistics. All public
meeting materials must be reviewed and approved by the Department’s PM prior to the public informational meeting. Public meeting materials should be submitted to the Department’s PM at least five days prior to meeting at the Poughkeepsie State Office Building.

General Outreach Activities:

- **Notification Letters to Elected Officials, Municipal Officials, School Districts and Transit Operators:** The Design-Builder will be responsible for preparing Project notification letters on DOT letterhead and DOT envelopes (supplied by DOT), for signature by the Regional Director, and distribution by the Design-Builder to the following key stakeholders, but not limited to: state and federal elected officials, municipalities, school districts and transit operators. Design-Builder should work with the Department’s PM to generate a list of key Project stakeholders. Project notification letters should be mailed six weeks prior to implementing Work Zone Traffic controls including off-site detours and/or the start of significant construction activities. Draft notification letters should be submitted to the Department’s PM for review and signature by Regional Director at least one week prior to scheduled letter mailing.

- **Utility Outages, Noise, Vibration, and Night Work:** The Design-Builder will notify affected residents and businesses of planned Project related utility outages 72 hours in advance by personal and/or written contact and maintain a record of each notification. The Design-Builder will immediately notify affected residents and businesses of any emergency or unforeseen utility outages. The Design-Build will provide the affected parties with information on the cause of the outage, actions being taken to alleviate the problem, and the anticipated duration of the outage.

- **Weekly Construction Activity Newsletter/Flyer:** The Design-Builder shall provide a weekly construction activity newsletter/flyer. The newsletter/flyer will be used to communicate project activities with project stakeholders. The first newsletter/flyer shall be issued no later than four weeks prior to implementing Work Zone Traffic Controls and/or the start of significant construction activities. The newsletter/flyer shall continue to be issued until substantial completion of the Project. The stakeholder distribution list must be reviewed and approved by the Department’s PM. Each newsletter/flyer must be reviewed and approved by the Department’s PM and Region’s PIO prior to distribution. Electronic distribution of weekly construction newsletter/flyer is acceptable.

- **Website:** The Design-Builder shall provide monthly Project updates, including a narrative, photos, and appropriate graphics. Website materials must be submitted to the Department’s PM for review and approval. Some of this information may be prepared primarily for other outreach activities but may need to be reformatted by the Design-Builder for use on the DOT website. The Project information shall be available for posting on the website 30 days prior to any work beginning.

- **24-Hour Project Phone Number:** The Design-Builder shall provide for a toll-free Project phone number. The Project phone line will be monitored by the Construction Quality Assurance Engineer (CQAE) or his designee. The phone number will be listed on all publicly distributed materials, including correspondence.

**Project Contact Database:** All contacts provided by the Department and/or made by the Design-Builder shall be logged into a database that is capable of tracking all contacts made. The Design-Builder shall create the database using Microsoft Access. The database, at a
minimum, shall list contact name, affiliation, address, phone number, and email. The database shall be populated by the Design-Builder with stakeholder information gathered by the Department and/or the Design-Builder. The contact information will be used for invites to public information meetings, and mailing project notifications as necessary. The Project contact database shall include, but not be limited to, residents, homeowner associations, community boards, neighborhood associations, elected state and federal official(s), municipal officials, business owners, emergency services, schools, transit operators, environmental groups, and so on.

7.3.3 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 Department’s PM for direction. The Region’s PIO will coordinate and respond to all media requests. In emergency situations, the Design-Builder shall immediately notify the Department’s PM of any situations that may involve the media. The Design-Builder shall alert all project personnel about this policy.

Press Releases: Upon request by the Department’s PM, the Design-Builder shall draft a press release announcing public information meetings, the start of construction, and completion of the project for use by the Regional PIO.

Travel Advisories: The Design-Builder shall provide the Department’s Construction Quality Assurance Engineer (CQAE) two week advance notice of: the commencement of construction work; any lane closures; road closures; or changes to traffic patterns. This will allow for timely notice to the traveling public with the issuance of travel advisories by the Regional PIO. The Regional PIO will develop the draft travel advisories for content and quality review by the Design-Builder and the Department’s CQAE. The travel advisories will be finalized and distributed to the press and appropriate state elected officials, and posted on the Project website by the Regional PIO.
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

It is anticipated that the required Final Utility Work Agreements will be executed between the Department, the Design-Builder and the owners of impacted utilities once the Design-Builder has determined the final locations of the impacted utilities. See Part 4 for details on utility inventory, coordination and relocations.

The Design Builder shall be responsible for the design and construction of these facilities as outlined in Part 4 - Utilities.

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 during the progression of the subsurface exploration. The final log shall provide descriptions of the subsurface materials and moisture conditions encountered in accordance with the Department’s standards. A description of the estimated size or thickness of any materials which impede the progression of the exploration through the soil profile shall also be included on the log. When completed, each final log must be designated as approved by the Lead Geotechnical Engineer by means of displaying the name or signature of the Lead Geotechnical Engineer.

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.

Unless otherwise noted, all retaining walls constructed within the project limits shall be form lined as detailed in Part 6 – RFP Plans of these Contract Documents.

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

9.3.8 Geotechnical Instrumentation & Construction Monitoring

The Design-Builder shall develop, implement, and maintain a geotechnical instrumentation and construction monitoring plan to monitor vibrations, accelerations, vertical settlement, and lateral movement of temporary support structures and adjacent ground, and existing structures and infrastructure during construction, including ancillary structures and infrastructure within the zone of influence of construction.

Wherever vibration-producing activities are located within 100 feet of a structure, building, or utility, the Design-Builder shall perform vibration monitoring in accordance with NYSDOT Special Specification 634.99020017 to address the potential impacts to nearby receptors due to construction or demolition activities associated with this Project. The term “receptor” includes buildings, utilities, newly constructed elements, and existing structures, for which construction impacts or Work above recommended limits may be detrimental.

The Design-Builder shall provide weekly construction instrumentation monitoring reports to the Department. Monitoring reports shall be interpretive in nature, and shall enumerate any corrections applied to the data including, but not limited to any notification measures taken regarding data. The weekly reports shall include clear and explicit statements of readings exceeding any pre-determined threshold values. The Design-Builder shall maintain the instrumentation and monitor the measurements during and after construction up to Final Acceptance.

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. Any permanent soil slopes inclined with a surface equal to, or exceeding, 1 V on 2 H shall incorporate some permanent measure which enhances the stability of the sloped surface. All soil slopes, regardless of the slope inclination, shall be designed to allow a grass covered surface.

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

The Design-Builder shall design and provide integrity and/or capacity testing of all deep foundations, in accordance with Department standards. The below requirements supplement, but do not supersede, Department standards.

Drilled Foundations

- Static load tests, or equivalent capacity testing, must be performed prior to installation of production drilled type foundations. One test must be performed for every 200 drilled piles and/or drilled shafts, or fraction thereof, and a minimum of one test per drilled pile and/or drilled shaft design.

- The integrity of all drilled type foundations must be monitored during installation. Integrity testing shall be performed on a minimum of 2% of all drilled piles and on 100% of drilled shafts. Integrity testing shall comprise of, as a minimum, crosshole sonic logging and in addition to may include thermal integrity profiling.

- All production drilled type foundation installations must be constructed using similar methods, have a similar design, and have similar grout/concrete placement volumes and/or pressures to duplicate the closest test pile. A log of each shaft’s drilling progression and its visual condition and water level or seepage prior to the placement of concrete shall be produced. All concrete and reinforcement installation and integrity testing data must be recorded for each drilled shaft or pile.

Driven Foundations

- All driven type foundations must contain a dynamic pile load test, or equivalent capacity testing, on a minimum of 0.5% of all driven piles, and a minimum of one test per substructure.

- All driven piles must have a similar design and be driven to similar criteria as the closest load tested pile.
• All installation data (blows counts/ft, redriving, pile driving set up, etc.) must be recorded for each driven pile

As part of the As-Built Plans, the Design-Builder shall provide installation records for all deep foundations installed, in accordance with Department standards.

The Design-Builder shall report the results of all foundation installation inspections and rock socket observations.

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 less than 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, including, but not limited to, the permanent bridges, superstructures, retaining walls, barriers, sign structures and miscellaneous structures. 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 a new bridge structure(s), including but not limited to the following: primary and secondary structural elements, reinforced concrete deck, deck joints, sidewalk(s), curb(s), pier structure(s), pier foundation(s), abutment structures, abutment foundations, retaining structures, bridge railings, bearings and drainage systems.

The new structure shall be designed and constructed as follows:

- The Route 32 over Route 17 structure(s) shall be constructed to carry all lanes and shoulders in both directions including sidewalks as required in Section 18.

- The Route 32 over Route 17 structure(s) shall have a minimum clear opening to accommodate a future Route 17 third lane in each direction. The span of the structure(s) shall accommodate 3-12 foot lanes, 10 foot shoulders (left and right side) in each direction and, a minimum 2 foot barrier width (left and right).

- Structures over Route 17, including ramps and existing structures to remain within the project limits, shall have a minimum vertical clearance over the entire pavement area of 16 feet – 6 inches. The minimum vertical clearance shall also apply to the projected elevation of a future third lane in either direction on Route 17.

- Structures over all other roads shall have a minimum vertical clearance of 14 feet – 6 inches. The Design-Builder may propose various types of superstructure systems and/or foundations and substructures to replace the existing bridge. Unless founded on rock, all structures crossing water shall be supported on piles or drilled shafts.

- The Route 6 “Ramp A” over Route 17 bridge shall have, at a minimum, the following work:
New York State Department of Transportation

- The steel superstructure shall be repainted in accordance with specification SECTION 573 – STRUCTURAL STEEL PAINTING: FIELD APPLIED – TOTAL REMOVAL. The new color shall be Grey – Munsell Book Notation 10B 6/1.

- The existing joint at the northwest end of the bridge shall be replaced such that the bridge is made “jointless” at the abutment with appropriate bearing arrangement. The joint at the southeast end of the bridge shall be designed and installed.

- The bearings shall be replaced.

- The structural deck riding surface of BIN 1077100 shall be milled ¾ inch and replaced with a ¾ inch PPC polymer overlay, the approach slabs shall also receive a ¾ inch PPC polymer overlay, as per the specifications of ITEM 584.40000009 – POLYMER OVERLAY WEARING SURFACE FOR STRUCTURAL SLABS (PPC).

10.3.1 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 4.

Barriers, railings and/or fencing that will be designed and constructed to contain users and materials, shall be detailed to prevent people from climbing, and provide for maximum safety and security.

Refer to Section 10.3.2 for aesthetic requirements related to bridge parapet walls, bridge railing, and fencing, if any.

B) Decks: Precast panel and/or cast in place decks are preferred. Cast in place decks shall use internally curing concrete as per NYSDOT Special Specifications 557.51090018 and 557.54090018. Stainless steel reinforcement shall be used in the deck of BIN 1003340. 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.

Top surfaces of all newly placed decks and concrete overlays, including approach slabs and sidewalks shall be inspected after 180 days of full live load exposure and after August 1st of the following summer. All cracks wider than 0.02 inches shall be epoxy injected as per ITEM 555.80020001 - CRACK REPAIR BY EPOXY INJECTION (RESTORATION). Inspected surfaces exhibiting cracks that are less than 0.02 inches in width shall be treated with one additional application of penetrating type sealer. The work stated above may require an uncompleted work agreement. All stated work above shall be performed with no additional cost to the department.

C) Deck Joints: Transverse as well as longitudinal joints are not allowed except at the ends approach slabs. All bridges shall accommodate temperature related movements both longitudinally and transversely. Recommendation for the use of a longitudinal joint for decks wider than 90 feet as per section 5.5.2 of the Bridge Manual shall not apply. Expansion/contraction of contiguous superstructures wider than 90 feet in the transverse direction due to temperature changes shall be accommodated by providing transverse translation capability for the bearings situated outside of the 90 feet limit stated in referenced section.
D) Superstructure: The superstructure may be constructed of concrete or structural steel. Concrete members, if used, shall not be adjacent concrete box beams. Structural steel, if used, shall be either conventionally metalized or galvanized steel.

If steel girders are utilized as primary members in conjunction with a composite reinforced concrete bridge deck, then, at a minimum, the beams and deck shall be made continuous for dead and live load in lieu of installing a bridge deck joint over the pier.

If prestressed concrete girders are utilized as primary members in conjunction with a composite reinforced concrete bridge deck, then, at a minimum, the beams and deck shall be made continuous for live load in lieu of installing a bridge deck joint over the pier.

Stainless steel reinforcement shall be used in the deck of BIN 1003340. Timber superstructure systems or decks are not permitted.

Fracture-critical members are not permitted.

Refer to Section 10.3.2 for color requirements related to painted steel superstructure elements, if any.

E) Prefabricated superstructure components: Connection Details between NEXT Beam Type D provided in BD sheets PC (1-39) - E shall apply. For this contract, Based on the specific needs of the bridges included in this project use of connection detail with non-shrink grout is not allowed. Minor modifications to the connection detail described above are allowed for prefabricated superstructure components other than NEXT Beam Type D.

Precast bridge deck system: Ultra High Performance Concrete (UHPC) joint details and other connection details found in RFP Part 7 shall be used for the precast deck system.

Prefabricated superstructure components and precast bridge deck system with Ultra High Performance Concrete joints do not require an overlay if required surface geometry and smoothness can be obtained by methods such as diamond grinding. Either a Polyester Polymer Concrete Overlay (¾ inch minimum thickness) as per the specifications of ITEM 584.40000009 – POLYMER OVERLAY WEARING SURFACE FOR STRUCTURAL SLABS (PPC), or a Class DP Concrete Overlay (1 ½ inch minimum thickness) shall be used when non-UHPC connections are used. Overlays shall not exhibit cracks other than minor hairline cracks and shall be fully bonded to the precast deck surface with a bond strength greater than 150 psi. Class DP Concrete with internal cure modification is allowed. Hot Mix Asphalt overlays detailed on BD sheets shall not be allowed.

F) Bearings: Design and location of bearings shall provide for easy maintenance and accessibility and future bearing replacement. Bearing replacement shall be easily accomplished via jacking points off the top of the substructure with no additional strengthening of members required. Jacking points with sufficient capacity (full dead load and live load) to allow the superstructure to be lifted for future bearing replacement under live load shall be provided. The plans shall include the location of the jacking points and the jacking loads.
G) 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.

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

H) Earth Retaining Structures: The Design-Builder shall determine the location(s) and types of earth retaining structures. Wall type selection and design by the Design-Builder shall meet all applicable Project Requirements. Wingwalls shall be considered as part of the abutment for a distance, measured along the wingwall from the centerline of bearings, equal to the maximum height of the abutment wall (as measured from top of grade at the base of the abutment to the bottom of lowest girder). Gabion and crib walls are not permitted.

Gabion and crib walls are not permitted.

All earth retaining structures, and noise walls, which incorporate metallic components or concrete reinforcement shall be designed or protected to prevent corrosion. All earth retaining structures, excluding abutments, shall utilize a continuous filter stone drainage column between the wall face elements and the wall backfill. No Mechanically Stabilized Earth Systems (MSES) shall be located in areas where the wall system will be exposed to permanent or repeating water levels above the base of the wall. If used to support a roadway, any Mechanically Stabilized Earth Systems (MSES) with metallic soil reinforcement shall incorporate a geomembrane or some other means to prevent the infiltration of roadway runoff into the MSES backfill.

I) Foundations: The Design-Builder shall calculate settlements for the different geotechnical conditions along the bridge. Settlements likely to occur during construction shall be calculated separately from long term settlements.

J) Mass Concrete: Mass Concrete Placements shall be defined as those placements having a minimum dimension greater than 54 inches in all directions. There shall be no minimum volume limitation to this definition. If the placement meets this definition, the placement shall be made in accordance with ITEM 555.020200001 – CONCRETE FOR STRUCTURES CLASS MP (MASS PLACEMENT). Specifically, a thermal control analysis shall be performed and a system used to manage temperature of the placement.

All reinforcement located in the mass placement(s), except for footings, shall be epoxy coated reinforcement. The combination of reinforcement and concrete mixture permeability shall meet any defined service life requirements of the RFP.

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

L) 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.

10.3.2 Aesthetics

Aesthetic treatments shall include...

• Form liner pattern shall be used on abutments, piers, wingwalls, and earth retaining structures as described below and details included in Part 6 – RFP Plans of these Contract Documents.
  o Pattern shall be as follows: Peaks shall be 5” on center with a 4” Peak width and a 1” Valley width ratio. Valley walls shall be perpendicular (90°) with Valley floor. Pattern shall have a minimum 1.25” Valley relief depth.
  o Pattern shall have a plain 8” Peak border on the top and sides where abutments, piers, and wingwalls have an engineered edge. A 12” Peak border will be used between purposed final grade and bottom of pattern.

• No form joint lines shall be permitted (grinding and filling of joint lines and holes are not permissible).

• Wingwalls and in-line walls constructed as part of the bridge carrying the Route 17 westbound exit ramp over the southern Woodbury Common Premium Outlet (WCPO) access road facing the WCPO shall match the finish of the existing retaining wall.

• The Route 32 over Route 17 bridge(s) shall be designed with concrete parapets with black vinyl coated protective fencing on both sides.
10.4 DEMOLITION REQUIREMENTS

10.4.1 Scope

The Design-Builder shall demolish and remove the existing bridge superstructure, piers, abutments, foundations, retaining walls, and pavement within the Project Limits in a safe and environmentally acceptable manner.

The demolition of the existing Bridge shall include all existing superstructure elements and all substructure elements as per NYSDOT Standards and BD Sheets and/or in accordance with environmental permitting. Where new foundations are placed at the locations of existing foundations the existing foundations shall be removed to the extent needed to construct the new foundations. All existing foundations shall be removed to a minimum depth of 2 feet below subgrade.

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.

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.

All proposed new or replacement bridges shall have a LRFR Inventory Rating greater than 1.2.

All Rehabilitated bridges shall have load ratings equal or greater than the rating prior to the proposed rehabilitation unless stated otherwise in the RFP.

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 6a and 6b, 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.

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 a non-native or an invasive
plant species. Regionally native plant species appropriate to the plant hardiness zone shall
be used unless local site conditions warrant the use of a non-native plant is identified.

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.

Provide landscape screening along the school road extension adjacent to neighboring
residential properties. Any trees removed in front of the school shall be replaced. Landscaping
restoration plan shall be submitted to the MWSD for review and approval.

Site Specific Requirements:

The Tree Replacement Factors do not apply to wetland mitigation areas. Wetland mitigation
areas shall be planted to replace the types of wetlands impacted and comply with permit
conditions. Wetland mitigation planting plans may use a combination of wetland seed mix and
nursery grown plant stock. Planting shall be done at the following spacing:

Herbaceous plants - 2’ on center
Shrubs – 5’ on center
Trees – 9’ on center

Post planting care and replacement plantings shall be as per the requirements of Special
Specification 611.190X0024, Post Planting Care with Replacement.
SECTION 12 SIGNAGE, PAVEMENT MARKING AND SIGNALS

12.1 SCOPE

The Design-Builder shall provide all permanent fixed signing, permanent pavement markings and signal work (if applicable) 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 remove and replace all sign structures on Route 17, Route 32 and Ramps 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.

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 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.  
F) Signing and pavement marking plans are required for the Monroe-Woodbury Central School District (MWCSD) improvements. The limits are within the State ROW or easements on school property. Traffic control sign and pavement marking materials for the school are the same as for the rest of the project.

12.3.2 Construction Requirements

12.3.2.1 Signs and Delineators

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. 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. Delineators, Reference Markers, and Snowplow markers are required for this project.

Any Monroe-Woodbury Central School District signs that are removed shall be replaced with new signs unless the Design Builder’s proposal changes the traffic or parking condition such that the sign is no longer required. The existing Central Valley Elementary School sign shall be removed and stored for reinstallation unless the School District provides a new replacement sign. The Design Builder is responsible for installing the Central Valley Elementary School sign including any foundation work, electrical connections, sign lighting, and landscaping. The final location of the Central Valley Elementary School sign shall be coordinated with the school district.

12.3.2.2 Pavement Markings

All linear roadway and cross hatching epoxy pavement markings shall be installed in accordance with the Department’s Specifications.

Multiple left lanes will require line extensions “cat tracks” thru intersection.

12.3.2.3 Traffic Signals

The Design Builder shall be responsible for the following:

- Removal of the Traffic Signal at NYS Route 32 @ Route 17 Eastbound Off Ramp (Intersection E5)
- Removal of the Traffic Signal at NYS Route 32 @ existing Woodbury Common South Entrance (Intersection E7)
- Reconstruction of the Traffic Signal at NYS Route 32 @ Larkin Drive / US Hwy 6 Eastbound on-ramp (Intersection E2)
- Reconstruction of the Traffic Signal at NYS Route 32 @ US Hwy 6 Westbound off-ramp/Proposed Route 17 Eastbound Off/On Ramps (Intersection E3)
Reconstruction of the Traffic Signal at NYS Route 32 @ Locey Lane/Woodbury Centre Intersection E4)

Reconstruction of the Relocated Traffic Signal at NYS Route 32 @ Nininger Rd / NYS Route 17 Westbound Off-ramp (Intersection E6)

Reconstruction of the Traffic Signal at NYS Route 32 @ Woodbury Commons North Driveway/School North Driveway. (Intersection E8)

This project shall include Adaptive Signal Control Technology (ASCT) for the entire length of the Route 32 corridor. All off-peak traffic data collection required for the design and optimization of the ASCT shall be the responsibility of the Design-Builder.

An uncompleted work agreement is required in order to perform the ASCT calibration. A 12mo calibration period shall commence on the date of the Project Acceptance. A plan will be required to be submitted to the Department within 90 days after NTP which fully details the Design-Builder’s Scope of work and Methodology for optimization of the ASCT. The value of the uncompleted work agreement shall be $100,000.

The Design-Builder shall incorporate the most current standard of traffic signal pole and cable supports, and also the latest standard for the push button control systems with count-down timers at the pedestrian safety walks.

At each intersection, the Design-Builder shall design and install new traffic signal infrastructure. The traffic signal infrastructure shall include installation of a new cabinet and controller, span poles and foundations, signal heads including backplates with retro-reflective tape in all directions, pedestrian signal poles, pedestrian signals and push buttons, cable and conduits, interconnect cable to adjacent signalized intersections, and loop detectors. The work shall include all equipment, hardware mountings, cabling, software modifications and labor necessary to install and integrate a fully operational signalized intersection.

New LED Pedestrian signal and Countdown Timer displays along with ADA compliant latching pushbuttons shall be installed at the intersection. Unless otherwise directed by the Department, the Design-Builder shall maintain the existing signal phasing for the new system.

The Design-Builder will be responsible for maintaining the existing signal until the new signal is activated.

Two weeks prior to beginning any construction work on traffic signals associated with the project, the Design-Builder shall notify the regional traffic signal section to perform an inspection of the existing traffic signal equipment. After the inspection, the Design-Builder shall submit to the Department a written notification of the date they will assume responsibility for traffic signal maintenance. No construction work shall proceed until traffic signal maintenance is assumed by the Design-Builder. The existing traffic signal shall be maintained by the Design-Builder under the requirements of Section 619 of the Standard Specifications, except for the controller, programming, and timing which shall be maintained by the Department.

Traffic signal activation shall be done in coordination with NYS Traffic Signal Personnel. The Design-Builder shall notify the NYS traffic Signal section two weeks prior to the requested date of activation.

The Design-Builder shall integrate the signals into the existing ITS system.

Signalized intersections on Route 32 corridor shall use Adaptive Signal Control Technology (ASTC) and consider other available technologies.

12.3.2.4 Loop Detectors

The Design-Builder shall replace all existing loops at each signalized intersection and provide detection zones on all side streets. All loops shall have two sets of 6’x20’ loop spaced 10’ apart
installed at the stop bar, centered in the respective lane, with three turns wired in parallel. The Design-Builder shall splice the loop wire to a twisted pair lead cable, which shall in turn be wired to the cabinet. In addition shielded lead-in cable shall be run from the new cabinet to the pullbox by any service road point loop detector. A separate lead-in shall be run for each loop. These lead-in cables are to be terminated inside their respective controller cabinets.

12.3.3 Conduit/Cabling Requirements

The following cables shall be utilized during the installation of new signal heads, pedestrian/countdown timers, interconnect and pushbutton signs:

A) Pedestrian/Countdown Timer and pushbutton sign: furnish and install 5C#14 awg cable for each set display;

B) One way signal heads: furnish and install a minimum of 5C#14 awg cable;

C) Two way signal heads: furnish and install a minimum of 10C#14 awg cable;

D) Three way signal heads: furnish and install a minimum of 15C#14 awg cable.

The Design-Builder shall furnish and install fiber optic cable for any underground interconnect installation. A drop cable meeting the requirements of the Department’s Special Specification 683.92150010 shall be connected to the cabinet. The interconnect shall be coordinated with ITS plans.

The Design-Builder shall furnish and install the following conduit as a minimum:

A) Detection loop conduits shall be 1” Flex between the first junction box and loop.

B) Conduits under roadway shall be 3” RGS.

C) Conduits between Span or Mast Arm poles and nearest junction box shall include a 1” RGS and 4” RGS.

D) Conduits between Pedestrian poles and nearest junction box shall use a 2” RGS.

E) All other underground conduit installations shall be 2” RGS.

12.3.4 Signal Heads/Signal Poles

All signal faces to be installed as part of this Project shall be 12” LED. Mainline approaches require one through head for every through lane for multilane approaches. For the purposes of traffic signal design, signal heads not facing the mainline approach shall have 5” back plates with 3” yellow reflective tape.

All pedestrian signals shall be 16” LED and shall consist of combination “Walking Man”/“Hand” symbols with countdown timers. Pedestrian signal installations shall also include audible signals, countdown timers and ADA compliant pedestrian pushbuttons for all marked, signalized crosswalks. Pedestrian countdown timers shall meet the requirements of Special Specification 680.81500010.

Span Pole Analysis shall be carried out using the latest version of the Department’s Span Wire Analysis Program to determine the signal pole sizes and foundations needed. Span pole sizes identified by the Span Wire Analysis Program shall be increased by a minimum of 15% loading.
rounded up to the nearest 1000 lb increment. Footing size shall be increased to accommodate the maximum loading of the pole.

12.3.5 Cabinet/Disconnect Switch

The Design-Builder shall install one state supplied microcomputer cabinet at each of the signalized intersections. The Design-Builder shall also install a disconnect generator transfer switch on the span pole to which the cabinet has been mounted, at a minimum of 8’ above ground level. The cabinet and disconnect switch shall meet the requirements of Special Specifications 680.80324515 and 680.94997008, respectively.

12.3.6 Pullbox

Where a fiber optic interconnect exists, a 30” square fiber optic pullbox shall be installed adjacent to the cabinet. All other pullboxes required shall be standard 26”x18” pullboxes. Pullboxes may be either reinforced concrete or reinforced concrete/bituminous fiber.

12.3.7 Power Supply

Power shall be supplied to the microcomputer cabinet from the nearest available utility pole. The power supply cable shall be a 2 conductor, 6awg cable conforming to the requirements of Special Specification 680.95020615.

12.4 DELIVERABLES

Section not used.
SECTION 13 LIGHTING

13.1 SCOPE

Pedestrian lighting shall be required along Route 32 from Larkin Drive to Woodbury Outlets Boulevard North. The Design-Builder shall replace and supplement the existing highway lighting to meet current standards at signalized and un-signalized intersections, including roundabouts. All new lighting shall be high efficiency. The Design-Builder shall install solar powered, high efficiency lighting for the parking areas and aisles of the Park and Ride facility(s) The Design-Builder shall conduct all work necessary to provide 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 following additional Standards:

13.2.1 Standards

A) ANSI/IES ANSI Approved Recommended Practice for Roadway Lighting, RP-8-00
B) ANSI/IES ANSI Approved Recommended Practice for Roadway Sign Lighting, RP-19-01
C) FAA Advisory Circular 70/7460-1K, Obstruction Marking and Lighting
D) IES Recommended Lighting for Walkways and Class 1 Bikeways, DG-5-94
E) NFPA NFPA 70 – National Electrical Code (NEC)
F) NYSDOT Policy on Highway Lighting
G) USCG 33 CFR 118 – Bridge Lighting and Other Signals

13.2.2 References

A) IES Guideline for the Application of General Illumination (“White”) Light-Emitting Diode (LED) Technologies G-2-10
B) NFPA NFPA 70E Standard for Electrical Safety in the Workplace
C) NFPA NFPA 780 Standard for the Installation of Lightning Protection Systems

13.3 REQUIREMENTS

13.3.1 General Requirements

The Design-Builder shall be responsible for designing, furnishing and installing all components required for the implementation of the lighting system for the Project including new luminaires,
controls, poles, mounting, wiring, conduits, and support hardware, as necessary for delivering a complete and functional lighting system.

Lighting for the Monroe-Woodbury Central School District (MWCSD) improvements shall be provided that replaces the existing lighting lost and bring the new lighting levels up to current standards in the areas of Lots A through D. Lot E off of Nininger Road does not require parking lot lighting. The school lighting system style and color shall be a close aesthetic match to the existing “shoebox” style lighting at the Monroe Woodbury High School.

The Lighting System within the Project limits shall be fully maintained by the Design-Builder for the duration of the Project. For maintenance accessibility, no luminaires shall be greater than 30' above finished grade. All lighting shall utilize aluminum poles and arms.

Continuous Freeway Lighting on Route 17 is not required.

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 meets or exceeds the uniformity and the luminance and/or luminance criteria during darkness;

B) Utilizes energy efficient and long-life, low maintenance lighting technologies that are found on the Department’s approved lists;

C) Can be fully and seamlessly integrated into the existing permanent lighting elements adjacent to the Project limits;

D) Utilizes a photo-control switch system that automatically activates lighting before dusk and deactivates the system past dawn;

E) Contains surge suppression devices for protection against damage by lightning strikes and complying with NFPA-780 and UL 96;

F) Provides fixtures that are water tight and intended for a marine/industrial environment; and

G) Utilizes lighting components that are readily available and not proprietary equipment.
13.3.2.2 Construction Requirements

The Design-Builder shall use materials listed on the NYSDOT approved list of materials and consistent with the details shown on the Department’s Standard Sheets.

The Design-Builder shall provide permanent lighting materials that satisfy the Project Requirements and applicable codes. In addition, the Design-Builder shall:

A) Ensure that all exposed raceways/conduits are made of PVC coated rigid galvanized steel (RGS). Short runs (no longer than 5 feet) of liquid-tight flexible metal conduit may only be used to make a final connection between the main power feeder and a light pole or fixture;

B) Ensure that all outdoor electrical enclosures and attached parts (e.g. breather drain) shall be type 316 stainless steel, rated NEMA 4X or a higher degree of protection;

C) Ensure that any new electrical enclosures shall have a key lock;

D) Ensure all lighting shall include breakaway devices, unless protected by concrete barrier. Light poles shall feature a breakaway base, except where located behind bridge rails.

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. The temporary system shall be energized either separately or though connection to the existing lighting system.

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 Hudson Valley Transportation Management Center (HVTMC).

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

A) Signalized intersections on Route 32 corridor shall utilize Adaptive Signal Control Technology (ASCT) and may also incorporate other available technologies.

B) Route 17 lane configuration shall be compatible with NYS Thruway cashless toll configuration.

C) ITS field devices, Fiber Optic communication network, integrate HVTMC ITS network and integration of the ITS field devices to the HVTMC ATMS are part of this work.

D) An early installation of the ITS system/travel time sensors before construction of the project shall be done on the approaches roadway as specified.

The Design-Builder shall design, furnish and install a complete, operational and tested ITS system including all required electronic devices for the System, all power service for the field ITS devices, ISP services for the communication Hubs, fiber optic communication network for ITS field devices, all associated mounting hardware, all required permits, and all associated cabling and integrate those devices into the HVTMC. Final logical integration to the NYSDOT TMC system will be by NYSDOT. The Design-Builder shall be responsible for all other work related to the ITS within the Project limits. All ITS and network equipment shall be compatible with the HVTMC’s ATMS and ITS network.

The Design-Builder shall maintain and protect the existing Fiber Optic distribution and trunk/backbone 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 HVTMC 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.

The Contractor shall notify the Department of all scheduled outages a minimum of 48 hours in advance. The Department shall be notified immediately for any emergency outage. Allowable time for an ITS site replacement (transition from an existing to a new station) shall not exceed 48 hours. The maximum allowable outage time for repairing an ITS decide is 24 hours.

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, and the following additional Standards:
14.2.1 Standards

NFPA:
- NFPA 502 Recommended Practice on Fire Protection for Limited Access Highways, Tunnels, Bridges, Elevated Roadways and Air Right Structures

IEEE
- All cable labels shall comply with the latest version of TIA 606-B standards

NTCIP:
- 1101 NTCIP Simple Transportation Management Framework
- 1102 NTCIP Octet Encoding Rules (OER)
- 1201 NTCIP Global Object (GO) Definitions
- 1203 NTCIP Object Definitions for Dynamic Message Signs

NYCRR:
- Part 56 of Title 12 of the Official Compilation of Codes, Rules; and Regulations of the State (12NYCRR, Part 56)

NEC:
- National Electrical Safety Month 2017

EIA/TIA:
- EIA/TIA 568 For CALES
- EIA/TIA 606-B Cable Labeling STANDARD
- EIA/TIA RS-222G

14.3 REQUIREMENTS

14.3.1 Variable Message Sign (VMS) / Dynamic Message Sign (DMS)

14.3.1.1 Removal of Existing VMS

Any existing VMS, where required, shall be removed by qualified technicians, including cabinets and all electronics, and shall be stored in the Design-Builders yard for pickup by the NYSTA and NYSDOT or directly transferred to NYSDOT/NYSTA yard. The Design-Builder shall remove the two portable VMS located on Route 17 eastbound right shoulder at Reference Marker RM 17 8310 1232 +200ft and eastbound median at Reference Marker.
RM 17 8310 1227 after the permanent DMS are installed, tested and fully functioning.

Equipment damaged as a result of improper removal or handling of any of the components shall be replaced with new in kind equipment at the Design-Builders expense.

Removal of any equipment shall be preceded by Pre-Removal test for their full operation and functionality of the device. Removed equipment shall have Post-Removal test for same full operation and functionality test performed in Pre-Removal test. Any fail test in Post–Removal shall be fixed by the Design-Builders.

14.3.1.2 Installation of New DMS

The Design-builder shall furnish and install new Dynamic Message Sign (DMS), LED, full Matrix, full color assemblies and all related installations and equipment for the operation of the sign. The DMS located on NY17 shall meet or exceed the requirements of NYSDOT Special Specification ITEM 683.93011108. The DMS located on NY32 and US6 shall meet or exceed the requirements of NYSDOT Special Specification 683.93021208. The communications from the roadside cabinet to the sign shall be over fiber optic link. The structure of the DMS shall comply with NYSDOT standard details and shall contain sign structure Cat walk and conduit foundation details.

A minimum of five permanent DMS assemblies shall be included in project. Refer to Part 7 – Engineering Data for minimum DMS locations.

14.3.1.3 Installation of New Cameras

The Design-builder shall furnish and install new HD IP Closed Circuit Television (CCTV) cameras and all related installations and equipment for the operation of the camera. The cameras shall meet or exceed the requirements of NYSDOT Special Specification ITEM 683.10120008.

Camera’s shall be installed on 50 foot or 75 foot tall Camera Poles with 2 Lowering Devices compatible with the proposed Camera Assembly equipment and systems to ensure proper integration. The camera poles shall meet or exceed the requirements of NYSDOT Special Specification ITEM 683.04105008 (50’ pole with 2 lowering devices) or 680.18010011. (75’ pole with 2 lowering devices).

A minimum of eight permanent pole mounted cameras shall be installed to monitor the Route 32, Route 17 (including toll plaza), and Route 6 corridors. The cameras shall be placed to optimize the viewing area of the above referenced routes/locations. Refer Part 7 – Engineering Data for minimum CCTV camera locations

14.3.1.4 ITS Traffic Speed Detection System

The Speed Traffic Detection installed shall meet or exceed the requirements of the following NYSDOT Special Specification ITEM 683.91150108.

- Minimum of 6 new Multilane Radar traffic detectors

Refer to Part 7 – Engineering Data for minimum Traffic Speed Detector locations
14.3.1.5 ITS Travel Time Detection System

The Travel Time Detection installed shall meet or exceed the requirements of the following NYSDOT Special Specification ITEM 683.10250208 and 683.10250308 with LTE wireless mobile services.

- Minimum of 7 new Bluetooth travel time detectors

Refer to Part 7 – Engineering Data for minimum Travel Time Detector locations.

14.3.1.6 ITS Roadway/Pavement Information Alert System

The Roadway/Pavement Information Alert Stations installed shall meet or exceed the requirements:

- Minimum of 2 new Roadway/Pavement Information Alert Stations, consisting of:
  - Non Destructive Technology
  - Road pavement sensor detecting road surface conditions, surface temperatures, relative humidity, dew & freezing temperatures, ice percentages as well as friction non-invasively
  - Snow depth laser sensor with millimeter accuracy
  - Remote Processing Unit
  - Local Alarm Generation and Warning Signal Activation capability
  - Atmospheric Sensors, Measurement of temperature, relative humidity, air pressure, wind direction, wind speed, precipitation intensity, precipitation quantity, radiation and lightning strikes
  - Visibility Range measurement Sensor up to 2 km
  - Warning dynamic message sign minimum display size 5’ x 5’ (64 x 64 pixel) RGB
  - Flashing beacon

Refer to Part 7 – Engineering Data for minimum Roadway/Pavement Information Alert Stations.

14.3.2 Fiber Optic Backbone

The ITS Communication System installed shall meet or exceed the requirements:

- Minimum of Two Fiber Optic Communication Hubs
  - Hub at NY17 at NYSP Troop F
  - Hub near Harriman Toll Barrier
  - Hubs shall be located in stand-alone cabinets. The external Hub cabinets shall meet or exceed the requirements of NYSDOT Special Specification 683.96036011. Hub cabinets shall be furnished with the following passive and active equipment:
    - UPS (Item: 683.80324011)
    - All network equipment core switch: Cisco IE5000 or equal
    - Access switch (Item: 683.84400108)
New York State Department of Transportation

- Router (Item: 683.84500108)
- Ethernet Firewall: Check Point 1200 or equal
- IP Power Distribution Unit (30A switchable and manageable IP PDU)
- FO patch panels (2 x 288 ports) Leviton or Coming or Belden or approved manufacturer
- Ethernet surge protectors: Emerson or approved equal
- Ethernet patch panel with 48 ports
- Non-IP alarm monitoring unit (the unit shall be: D-PK-TMPDF-12015.0000 and D-PK-TMINX-12101.00002 for DPS manufacturer or other vendors approved as equal)
- All other accessories and equipment needed for full functionality of the cabinet.
- All equipment shall be rugged type.

- Optical Ethernet Network (local 1G Ethernet distribution and 10 G backbone network)
- Rugged Level 2 and 3 Ethernet switch - shall meet or exceed the requirements of the following NYSDOT Special Specification ITEM 683.84400108 and 683.84403004
- Rugged firewall and router - shall meet or exceed the requirements of the following NYSDOT Special Specification ITEM 683.84500108

Rugged firewall shall meet or exceed the requirements:

The Rugged Ethernet Firewall shall be compatible with the Ethernet Local Area Network (LAN) equipment that is currently in use by the HVTMC network. The Rugged Ethernet Firewall shall be capable of supporting IPSec VPN connections. It shall also be capable of providing data routing and address forwarding functions between the various connected networks. The Rugged Ethernet Firewall shall also provide web security, botnet filtering, and intrusion prevention, meet the industry threat-focused next-generation firewall (NGFW) for threat and advanced malware protection and Next Generation Threat Prevention for Critical Infrastructure and Industrial Control Systems. The Rugged Ethernet Firewall shall include Intrusion Prevention System (IPS), Application Control, Antivirus, and Anti-Bot protection. The Firewall shall be equipped with a minimum of:

- Four (4) 10/100/1000 Mbps RJ-45 Ethernet ports (SFP)
- Serial Data port
- USB port
- Console port
- All licenses required for the Firewall full operation as per requirement on this specification for duration of three years after Firewall furnishing and acceptance by the HVTMC.

The Firewall shall be manageable remotely or locally utilizing multiple industry standard interfaces, specifically a web-based user interface: Telnet, Console and SNMP. The Firewall shall offer several mounting options including DIN Rail mounting capability. The Firewall shall both support industry standard features, and protocols such as: BACnet, DNP3, ELCOM7, EtherCAT, EtherIP, ICCP, IEC.60870.5.104, IEC.61850, Modbus, OPC, MMS and PROFINET.

Refer to Part 7 – Engineering Data for minimum Fiber Optic Communication Network System.
14.3.2.1 Fiber Optic Cable

The Fiber Optic Cable installed for the fiber optic backbone shall meet or exceed the requirements:

- Fiber Optic Single Mode Ribbon Backbone cable 288 Fibers along NY17 between two proposed Hub locations – The cable shall comply with:
  - Ribbon with 12 fibers
  - Gel free, Indoor-Outdoor rated cable
  - UV-resistant, flame-retardant jacket
  - Waterblocked cable
  - Test compliance: ANSI/ICEA S-104-696, Telcordia GR-409
  - Max. Tensile Strength, Short-Term: 2700N
  - Max. Tensile Strength, Long-Term: 890 N
  - Nominal Outer Diameter: less than 0.9"
  - Min. Bend Radius Installation: 15"
  - Min. Bend Radius operation: 10"
  - Max attenuation: 0.4 dB(1310 nm) and 0.3db(1550 nm)

- Fiber Optic Single Mode Distribution cable 24 Fibers shall meet or exceed the requirements of the following NYSDOT Special Specification ITEM 683.92202408

- All electrical enclosures and boxes provided by the Design-Builder shall be stainless steel NEMA 4X

- All conduits shall be High Density Polyethylene (HDPE) or hot-dipped Rigid Galvanized Steel (RGS). All fittings and conduit bodies shall match the conduit type.

- As part of the system, the Power and communication conduit routes shall be designed and constructed in the project limits. Refer to the Contract Reference Documents for minimum conduit system. This infrastructure system shall have:
  - Minimum one 2” Power conduit in the roadway right-of-way
  - Minimum two 2” Power conduits on the bridge structure
  - Minimum one 4” Communication conduit with 4 HDPE inner-ducts on the roadway right-of-way
  - Minimum two 4” Communication conduits with a total of 8 HDPE inner-ducts on the bridge structure
  - All inner-ducts shall met or exceed the requirements of NYSDOT Special Specification 680.99120011.
  - Electrical pull boxes at maximum 150’ spacing
  - Fiber Optic pull boxes at maximum 600’ spacing
  - Electrical and communication pull box or junction boxes on each side of bridge crossing

14.3.2.2 Communication hub ISP Services

The Contractor shall furnish and install a high speed Internet service with minimum 800MB upload speed at each proposed Hub location. The contractor shall responsible for the service monthly fee after operation of the hub until end of the period of the ITS system acceptance test. All the documentation of the service shall be transferred to NYSDOT-HVTMC. All equipment, conduits, cabling and ISP service connection fees shall the Contractor’s responsibility.
14.4 SYSTEM TEST PROCEDURES

The Design-Builder’s ITS System Integrator shall be responsible for testing the installed equipment to verify that it has been installed correctly, is performing as specified, and supports overall system operations. This testing will be accomplished in a sequence of procedures that begin with basic components and culminate in exercising the total system in its operational configuration.

For all tests, the Integrator is responsible for providing detailed, step-by-step procedures for the testing. These procedures shall specifically identify:

- The equipment configuration,
- The sequence of operations for the test,
- The test setup including environmental conditioning
- The required test equipment and its configuration
- The expected results and pass/fail criteria
A copy of the test procedures shall be furnished to the Department for review prior to the commencement of the tests.

14.4.1 Factory Testing

For off-the-shelf equipment and components, the Integrator may establish compliance with the minimum performance established in the specifications through third party verification and a manufacturer’s quality assurance plan. The manufacturer shall supply documentation to verify that the performance of the equipment has been measured against the manufacturer’s equipment specification over the entire environmental range.

For equipment and components that are unique to and specifically manufactured for the project, the Integrator shall schedule an acceptance test at the factory to demonstrate compliance with the specifications. These tests shall demonstrate compliance with all aspects of the specifications over the entire range of environmental conditions. For tests that require environmental chambers of special conditions, the manufacturer may substitute documented test results in lieu of actually performing the procedure.

14.4.2 Operational Stand Alone Testing

The operational standalone testing demonstrates that the equipment has been installed correctly and is operational. These tests involve only single items of equipment or equipment assemblies. Portable laptop computers and test equipment supplied by the Design-Builder may be used to simulate control of the standalone equipment. Typical tests would include but are not limited to:

- Physical inspection of the installation;
- Continuity tests;
- Power-on tests;
- Voltage measurements;
- Cable performance tests (twisted-pair and fiber optic). For optical fibers, this would include OTDR and attenuation measurements. For twisted-pair cable, this would include checks for grounds, splits, crosses, and opens.
- Cabinet assembly-performance tests (e.g., cabinet to radar detector);
- Verification of radar detector measurements;
- Functional performance communications;

Operational standalone testing shall also include equipment setup. This includes configuring the equipment’s options and setting the equipment’s system identification, including its network address.
14.4.3 Group Site Verification Testing

Group site verification testing measures or demonstrates the performance of “linked” equipment and components. Typical tests include but are not limited to:

- Communications links with modems connect to optical fibers
- Multiplex connections and performance between nodes such as minihubs or shelters and operations centers such as the HVTMC.
- Modem circuits
- Data circuits

14.4.4 Subsystem Integration Testing

Subsystem integration testing includes all components in the subsystem and demonstrates that the subsystem is totally functional and capable of supporting operations. Each subsystem shall be tested in its operational configuration, demonstrating complete compliance with all components between and including the operations center and the field elements.

14.4.5 System Acceptance Testing

The system acceptance test demonstrates that the installed equipment will operate as specified and support operations for a minimum of 90 days. The system acceptance test also provides a controlled burn-in period for the installed equipment. Procedures shall be provided to exercise the equipment and associated functions throughout the course of the test.

If any equipment should fail during the 90-day period, those subsystems affected by the failed equipment shall be subject to an additional 90-day test period. The Engineer of Record will determine which equipment has been affected by the failure and subject to an additional 90-day period of testing, present the information to the Department’s PM for comment and acceptance.

14.5 DOCUMENTATION REQUIREMENTS

The Design-Builder shall prepare all Documentation as required and submit to the Department for review. The Department’s review of system documentation does not waive the Design-Builder’s responsibility in furnishing and installing a fully operational and functional system meeting the specifications herein. As a minimum, the design package shall include the following:

i- ITS Detail Tables including:
  - Utility Tables
  - Pull Boxes and Junction Boxes Tables
  - ITS Field Cabinet Location and designated ITS Items at each Cabinet
  - FO Splicing and Termination Tables

ii- ITS Location Layout Drawing with following information in same drawing
  - Proposed ITS Structure calling (Pole and Sign Structure including existing structure)
  - Proposed ITS cabinet and all designated item on the site
- Proposed power service location conduits and pull boxes, cables, disconnect box
- Proposed communication service for each location including, fiber run, ISP service point (if applicable), conduits, FO pull boxes, cables, termination panels, demarcation point
- ITS device conduits and cables

iii- Power- Electrical Drawings
   - Electrical One Line Diagram
   - Meter Cabinet Circuit diagram
   - Meter cabinet or Load Center Detail Drawings

iv- ITS Structure Detail drawing included:
   - Proposed Structure Details
   - Proposed sign structure signs placement and view plan
   - Structure Tables

v- Civil design works related to the ITS implementation including:
   - GR design
   - Pavement works

vi- Traffic Work Zone Drawings

vii- Traffic design works (in included)

viii- Landscape design

ix- ITS Details
   - VMS Details for all type to be used
   - Detector Pole/Structure Assembly Details for all type to be used
   - CCTV Camera Pole/ Structure Assembly Details for all type to be used
   - Field Cabinet Details for all type to be used
   - ITS Pavement Sensor and Warning System Details
   - ITS Communication Hub Details
   - Field Cabinet Wiring for all type to be used
   - ITS Communication Hub Wiring
   - FO Aerial Cable Installation Details
   - ITS Power and FO Pull Boxes Details
   - ITS Trenching Details
   - ITS Conduit Over Structure Details
   - ITS Cabinet Typical Work Pad Details
   - ITS Lowering Device Details including the lowering devices wiring

x- ITS Quantity Tables (per location and per item)

xi- ITS Removal Plan including all ITS equipment, conduit, Pole, Structure, cables, cabinet and Electrical panel that need to be removed

xii- Field Equipment Cabinet Detail Drawings:
   - Cabinet, pull boxes and cables Location Layouts
   - Cabinet Layout (all physical dimensions and assembly details shall be included)
   - Cabinet Mounting details (including foundation, cabinet base details and pole mounting details)
   - Cabinet Equipment Placement/Layout
- Cabinet Power Panel/Distribution Wiring Diagram (all AC and DC power distribution shall be included)
- Cabinet Communication, control wiring Diagram (all equipment connections and interfaces shall be included)
- Cabinet connection to ITS device
- Cabinet Test Plan and Test Results
- Cabinet equipment, cables and wiring labeling details

All drawings shall be 11” x 17” size. All drawing shall be submitted in hard copy, electronic, and CADD/Microstation (latest version used by NYSDOT) formats.

14.5.1 Shop Drawings and Test plans

Test plan submittals shall be furnished by the Design-Builder to the Department to demonstrate that the System and associated products, intended to be supplied for this Contract, have the capability to meet the functional objectives required by the Technical Parameters. System documentation submittals required shall consist of:

- Factory Acceptance Test Plan and Report.
- Field Acceptance Test Plan and Report.
- Operational Acceptance Test Plan and Report.
- Operating Documentation.

The Design-Builder shall provide the Department with the following documentation at the conclusion of the project:

- A minimum of five copies of all manufacturers’ documentation for all equipment to be supplied as part of this project. This documentation shall include all operations, maintenance, software support, and protocol descriptions available from the manufacturer of each component.
- All documentation specifically requested in the individual item specifications.
- A minimum of three copies of written documentation which contains the correct hardware (dip switch settings) and software adjustable configurations for all equipment used in the project.
- A chart which details the pin-outs of all cable assemblies and actual interconnection of all system components.

Manufacturer's Support Service:

All IT'S and network equipment furnished in this project shall have minimum of three years manufacturer’s support service. The support service shall include the manufacture technical services contract for duration of three years after equipment is furnished. The support service coverage shall include:

- Access to the manufacturer’s technical assistance center/service,
- Hardware replacement in schedule of 8 hours/day x 5 days/week and x 4 weeks/month)
- Updates for the device or equipment operating software license,
- Registered access to the manufacturer's knowledge base and support tools.
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

The number of lanes to be maintained shall be as specified in Section 15.3.5 – Closure Restrictions.

In the event that construction activities are not complete, and lanes are reopened, traffic shall, at a minimum, be maintained on hot mix asphalt binder.

In the event that temporary traffic is to be maintained over the winter months, epoxy pavement markings shall be utilized.

No offsite detours are allowed.

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 and includes durations and traffic pattern changes that will exceed 10 hours in any 24-hour period.

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

The Design-Builder shall be aware that no work shall be performed and no temporary lane closures and/or shoulder closures shall be permitted on the following State recognized major holidays:

A) New Year’s Day;
B) Memorial Day;
C) Independence Day;
D) Labor Day;
E) Columbus Day
F) Thanksgiving Day;
G) Christmas Day.

Construction activities using temporary lane closures shall be suspended to minimize travel delays associated with road work for the major holidays as follows:

- Friday, Saturday, Sunday and Monday Holidays – Beginning 0600 the business day before the holiday and ending 0600 the business day following the holiday.
- Tuesday Holidays – Beginning 0600 the Friday before the holiday and ending 0600 the next business day.
- Wednesday Holidays – Beginning 0600 the Tuesday before the holiday and ending 0600 the next business day.
- Thursday Holidays – Beginning 0600 the Wednesday before the holiday and ending 0600 the following Monday.

School Restrictions

The Design-Builder shall be aware that no work and no temporary lane closures and/or shoulder closures shall be permitted on Monroe Woodbury School Property and/or access driveways/roadways during the following School Events:

A. Open House Night (2 days): September 18 +/-
B. Homecoming: September 28 +/-
C. Parent Teacher Conferences - Fall (2 days): November 18 +/-
D. Parent Teacher Conferences - Spring (2 days): April 16 +/-
E. Graduation: June 23 +/-
F. Major Sporting events – Sectional games (dates vary)

Woodbury Common Premium Outlet (WCPO) Restrictions

The Design-Builder shall be aware that no work and no temporary lane closures and/or shoulder closures shall be permitted on WCPO Property and/or access driveways/roadways during the following times:

A. Black Friday Week: 0600 Monday before Thanksgiving to 0600 Monday after Thanksgiving.

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

i. The same number of travel lanes, including turning lanes and ramps, as exist prior to this contract shall be maintained in each direction during peak hours.

ii. Single lane closures shall only be permitted during non-peak hours.

iii. Weekdays are defined as from 0500 Monday – 1200 Friday. Weekends is defined as 1200 Friday – 0500 Monday.

iv. The following tables define peak hour lane closure restrictions by corridor. The locations of the ramps specified below are included in the Existing and Proposed Roadway Key Plan included in Part 7 – Engineering Data.

<table>
<thead>
<tr>
<th>Route 17 Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment</td>
</tr>
<tr>
<td>Eastbound Mainline</td>
</tr>
<tr>
<td>Westbound Mainline</td>
</tr>
<tr>
<td>Ramps H &amp; G</td>
</tr>
<tr>
<td>Ramps J &amp; K</td>
</tr>
<tr>
<td>Ramp F</td>
</tr>
</tbody>
</table>

Temporary lane closures shall not be allowed from 1200 Hrs. Friday – 2200 Hrs.
Friday and from 1400 Hrs. Sunday – 0500 Hrs. Monday. Additionally, temporary lane closures shall not be allowed during weekends from July 1st to December 31st between the hours of 1100 Hrs. - 2200 Hrs.

### Route 32 Corridor

<table>
<thead>
<tr>
<th>Segment</th>
<th>Weekday Restricted Hours</th>
<th>Weekend Restricted Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound Mainline</td>
<td>0600 – 0900</td>
<td>Unrestricted **</td>
</tr>
<tr>
<td></td>
<td>1400 – 1730</td>
<td></td>
</tr>
<tr>
<td>Southbound Mainline</td>
<td>0600 – 0900</td>
<td>Unrestricted **</td>
</tr>
<tr>
<td></td>
<td>1400 – 1730</td>
<td></td>
</tr>
<tr>
<td>C.V. North &amp; C.V. South</td>
<td>0600 – 0900</td>
<td>Unrestricted *</td>
</tr>
<tr>
<td></td>
<td>1400 – 1730</td>
<td></td>
</tr>
<tr>
<td>WO Blvd North</td>
<td>1600 – 2200</td>
<td>Unrestricted **</td>
</tr>
<tr>
<td>WO Egress Drive</td>
<td>1600 – 2200</td>
<td>1100 – 2200</td>
</tr>
<tr>
<td>W.O.B-S</td>
<td>0600 – 1800</td>
<td>0600 – 2000 **</td>
</tr>
</tbody>
</table>

* Temporary lane closures shall not be allowed during School Events.
** Temporary lane closures shall not be allowed during weekends from July 1st to December 31st between the hours of 1100 Hrs. - 2200 Hrs.

### Route 6 Corridor

<table>
<thead>
<tr>
<th>Segment</th>
<th>Weekday Restricted Hours</th>
<th>Weekend Restricted Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound Mainline</td>
<td>0500 – 0900</td>
<td>Unrestricted</td>
</tr>
<tr>
<td></td>
<td>1500 – 1800</td>
<td></td>
</tr>
<tr>
<td>Westbound Mainline</td>
<td>0630 – 0900</td>
<td>Unrestricted</td>
</tr>
<tr>
<td></td>
<td>1600 – 1900</td>
<td></td>
</tr>
<tr>
<td>Ramps B &amp; D</td>
<td>0500 – 0900</td>
<td>Unrestricted</td>
</tr>
<tr>
<td></td>
<td>1500 – 1800</td>
<td></td>
</tr>
<tr>
<td>Ramps C &amp; A</td>
<td>0630 – 0900</td>
<td>Unrestricted</td>
</tr>
</tbody>
</table>
1600 – 1900
Temporary lane closures shall not be allowed during the weekend of the Bear Mountain Octoberfest.

**Short Term Traffic Stoppages**

i. Short term stoppages shall only occur between 2300Hrs. and 0500Hrs. and shall not require use of an offsite detour route. Short term stoppages shall be limited to a duration of 10 minutes and traffic queues shall be cleared prior to subsequent stoppages.

Route 17 Short term stoppages shall only occur between 2300 Hrs. and 0500 Hrs. and shall not require use of an offsite detour route.

**15.3.6 Minimum Lane Widths during Construction**

The Design-Builder shall maintain a minimum travel lane width of **10** feet on all roadways within the project limits with the exception of Route 17, which shall maintain a minimum travel lane width of **11** feet during construction.

**15.3.7 Portable Variable Message Signs**

The Design-Builder shall prepare a Portable Variable Message Sign plan to sufficiently inform the traveling public for the duration of this Contract. The Portable Variable Message Signs (PVMS) shall accommodate the various WZTC schemes. The Design-Builder shall provide, as a minimum, ten (10) Full Matrix Portable Variable Message sign, but more should the Design-Builder’s design dictate. The plan shall be 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. 619.110513 (Portable Variable Message Boards with Cellular and NTCIP compliance Options).

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.

The pavement markings for work zone traffic patterns that remain in place over the winter season shall be epoxy pavement markings (15-mils) meeting the standards of Section 685 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. The Department’s Project Manager will, in turn, notify the Hudson Valley Transportation Center’s Surface Transportation Controller (STC).

The Hudson Valley Transportation Management Center’s Road Work Form shall be used by the Department’s Project Manager to notify the STC of lane and/or shoulder closures. The Road Work Form is included as a Reference Document on the Department’s Project website.

The Design-Builder is responsible for preparing the Road Work Form and submitting it to the Department’s Project Manager. The Road Work Form must be submitted to the Department’s Project Manager a minimum of seven (7) calendar days in advance of scheduled closures. The Department’s Project Manager will respond within four (4) calendar days after receipt of the Road Work Form.

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.

All reconstructed full depth Route 17 pavement sections shall meet the requirements of rigid pavement design. Travel lanes built adjacent to existing lanes or on a new alignment shall be rigid pavement. Rigid pavement is required to extend to the end of the physical gore of the ramp.

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.

The Monroe-Woodbury High School parking lots and drive extension shall consist of a 12” subbase, with a 7” base course (2 lifts of 3½” each), a 2” binder course and a 1½” top course.

The Park and Ride Facility shall consist of a 12” subbase, with a 7” base course (2 lifts of 3 ½” each), a 2” binder and a 1 ½” top course.

16.3.1 Full Depth Reconstruction

The Design-Builder shall develop and construct pavement section(s) for full depth reconstruction, including subbase, of the Project roadways in conformance with the Comprehensive Pavement Design Manual, using the ESAL-based pavement design method.

Full depth reconstruction is required within the limits of any horizontal alignment changes, or vertical alignment changes until such point as the revised alignment meets the existing alignment. However, increases in profile elevations, up to eight inches (8”), may be made through asphalt overlays without the requirement of full depth reconstruction. No partial-width full depth reconstruction will be permitted; any roadway requiring full depth reconstruction shall be reconstructed for its full width, including shoulders, curbs and/or sidewalks.
If any roadway is permanently widened for the purpose of providing additional travel and/or turning lanes, new full depth pavement need only be developed and constructed for the widened section, provided that no other portion of the pavement within the widened section requires full depth reconstruction for any other purpose. However, the existing pavement within the widened section shall be milled and resurfaced from curb to curb or edge of pavement to edge of pavement to provide a uniform pavement as specified in Section 16.3.2.

Sidewalks shall be separated from adjacent roadway pavement by curbing. A snow storage area shall be provided where it is feasible to do so within the available ROW. If an adjacent snow storage or utility buffer is a hard surface, permeable or impermeable, the material is determined by the Design Builder but shall provide a visual contrast to the adjacent sidewalk surface.

16.3.2 Milled and Resurfaced Roadways

The Design-Builder shall mill and resurface pavement areas as necessary to provide for a smooth transition between the existing and fully reconstructed pavement surfaces in accordance with the applicable Standard Sheets. The Design-Builder shall mill a minimum of 50’ beyond the limits of any full depth reconstructed pavement sections.

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.

NYS Route 32 shall be milled and resurfaced with 1.5 inches of asphalt pavement starting approximately 350 feet North of the Woodbury Commons North Driveway intersection E8 and ending approximately 100 feet south of the intersection with Bond Street where the pavement was rehabilitated under a previous NYSDOT contract.

A snow storage area is not required along the NYS Route 32 milled section.

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 size the drainage system to accommodate the future third through lane in both Eastbound and Westbound Route 17 (Future I-86). All drainage elements shall be removed and replaced with a new drainage system within the full depth roadway construction limits of the project.

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

17.3.1 Stormwater Practices

No stormwater practices shall be installed in the median of Route 17.

17.3.2 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.
17.3.3  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.

17.3.4  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-Builders 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, reconstruction, or removal of the following ramps, roadways and intersections, including all road appurtenances, protections, and safety devices not specifically cited in other Project Requirements:

Ramps
- Reconstruction of the Route 17 Westbound Off Ramp (Ramp F)
- Route 17 Eastbound On Ramp from Northbound Route 32 (Ramp G)
- Construction of the relocated Route 17 Eastbound On Ramp (ramp G2)
- Reconstruction of the Route 17 Westbound On Ramp (Ramp J)
- Removal of the Woodbury Common South Entrance (Ramp FWC)
- Construction of the relocated 17 Eastbound Off Ramp (Ramp H2)
- Reconstruction of the relocated Route 17 Westbound On Ramp from Southbound Route 32 (Ramp J2)

Roadways

Route 32
- Full depth/width asphalt reconstruction of 0.8 mile of NYS Route 32 starting approximately 750’ south of the Larkin Drive intersection E2 and ending approximately 350’ North of the Woodbury Commons North Driveway intersection E8.
- Asphalt resurfacing (Mill & Fill top course) of NYS Route 32 starting approximately 350’ North of the Woodbury Commons North Driveway intersection E8 and ending approximately 100’ south of the intersection with Bond Street.

Route 17
- Full depth/width PCC reconstruction of 0.8 mile of NYS Route 17 starting approximately 250’ west of the toll booth ending at the end of the Westbound Route 6 flyover acceleration lane (Ramp A). Two lanes eastbound and two lanes westbound shall be fully reconstructed. Grading, drainage and bridge opening width shall be designed and constructed to accommodate a future third lane for both eastbound and westbound directions and the future widening of the left shoulder from 4 feet to 10 feet. The future third lane area shall be graded and seeded.

Other Roadways
New York State Department of Transportation

- Full depth/width construction of Nininger Road
- Full depth/width construction of the new Woodbury Common Blvd. South

The Design-Builder shall improve safety and alleviate traffic operation deficiencies on Route 32 and Route 17 during both the traditional commuter peak hours and the weekend shopping peak periods. The indicative plan and VISSIM Models will be provided and shall serve as a baseline condition where all Measures of Effectiveness (MOEs) shall be attained or exceeded.

School requirements:
Monroe-Woodbury High School Drive Extension:

The Design-Builder shall mitigate crossings of the proposed School Drive Extension with the High School Cross County Course. There is a minimum of two (2) crossings associated with the course as shown in the High School Cross County Course map provided in the Reference Documents. The Design-Builder shall provide trail transition grade over the School Drive Extension by including a minimum 10 foot wide trail with a maximum grade of 25%.

The Design builder shall construct 5 parking lots for the MWSD meeting the minimum space requirements below and constructed within the limits shown on the Indicative Plans in Part 6 – RFP Plans:

Lot A: 50 parking spaces  
Lot B: 15 bus parking spaces  
Lot C: 80 parking spaces  
Lot D: 90 parking spaces  
Lot E: 50 parking spaces

The parking lots shall be constructed to include, but not limited to, asphalt pavement, curbing, drainage, and stripping.

The Design-Builder may need to relocate the Cross Country trail on the south side of the property to account for the proposed Parking Lot E. If needed, the Trail shall be constructed a minimum of 10 foot wide and seeded.

The Design-Builder shall furnish and install two (2) automated gates meeting the following requirements found in Part 7 – Engineering Data.

Access:

Woodbury Common Premium Outlets (WCPO)
- WCPO ingress/egress (in the same location as the existing northern access drive to WCPO)
- WCPO Ingress (accessing existing outer ring road approximately 550 feet south of the northern WCPO access drive)
- WCPO grade separated ingress/egress (in close proximity to the western most point of the WCPO outer ring road)

Monroe-Woodbury Central School District (MWCSD) Campus
- MWCSD ingress/egress (in the same location as the existing northern drive to school)
- MWCSD ingress/egress – right in/right out (approximately 500 feet south of the northern school drive)

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

Route 17, inclusive of interchanges and access, shall be designed and constructed to meet the requirements for Interstate Functional Classification.

Route 17
- Design Speed = 70 mph
- Lane Width = 12 ft
- Shoulder Width Left = 4 ft
- Right = 10 ft
- Vertical Clearance = 16’-6”

Route 32
- Design Speed = 45 mph
- Lane Width = 12 ft
- Shoulder Width Left = 2 ft curb offset
- Right = 8 ft
- Vertical Clearance = 16’-6” over Route 17, 14’-6” all other roadways
- Concrete Sidewalk Width = 5 ft (minimum)

A contiguous sidewalk shall be installed along the Route 32 corridor within the project reconstruction limits. The design builder shall determine where the sidewalk(s) are located. There shall be pedestrian connectivity to all generators and receptors. Within the mill and fill limits of Route 32, the curb and sidewalk on the west side shall be replaced.

Ramps
- Design Speed
  - Direct = 40 mph
  - Semi-Direct = 30 mph
  - Loop = 25 mph
- Vertical Clearance = 16’-6”

Nininger Road
- Design Speed = 40 mph
- Lane Width = 12 ft
- Shoulder Width Left = 2 ft curb offset
- Right = 8 ft
- Vertical Clearance = 14’-6”
- Concrete Sidewalk Width = 5 ft (minimum)

Monroe-Woodbury Schools
- Design Speed = 25 mph
- Lane Width = 11 ft
- Shoulder Width = 2 ft
- Design vehicle = SB-40
- Concrete Sidewalk Width = 5 ft (minimum)

Woodbury Common Premium Outlets (WCPO)
- Design Speed = 25 mph
Lane Width = 12 ft  
Shoulder Width = 1 ft min. curb offset, 4 ft uncurbed  
Design vehicle = BUS-45  
Vertical Clearance = 14' 6"  
Concrete Sidewalk Width = 5 ft (minimum)

### 18.3.2.1 Operational Requirements

#### Freeway

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#### Arterial

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<td>From Rte 17 EB Off-Ramp to Woodbury Commons North</td>
<td>2.84</td>
<td>3.25</td>
<td>3.63</td>
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### New York State Department of Transportation

From Rte 17 WB Off-Ramp to Woodbury Commons North | 1.64 | 1.64 | 2.10
---|---|---|---
From Rte 17 WB Off-Ramp to US 6 EB On-Ramp | 3.33 | 2.94 | 3.24
From Woodbury Commons North to Rte 17 EB | 3.04 | 3.01 | 2.88
From US 6 Off-Ramp to Larkin Drive | 1.25 | 1.56 | 1.51
From Larkin Drive thru US 6 Off-Ramp | 1.14 | 1.48 | 1.60
From Woodbury Centre to Larkin Drive | 1.77 | 2.07 | 2.05
From Larkin Drive thru Woodbury Centre | 1.26 | 1.53 | 1.54
From Nininger Rd to SB Rte 32 Limit | 2.43 | 2.14 | 2.62
From SB Rte 32 Limit to Nininger Road | 2.65 | 2.78 | 3.09

**Notes:**
1. The network described as NB Rte 32 and SB Rte 32 extends from Woodbury Commons Northern entrance (Northern Limit) to US 6 EB On-Ramp (Southern Limit)
2. The Travel Times reported shall be obtained using the results from the VISSIM traffic simulation files provided by the Department. The queue counter settings within the VISSIM files prepared for the Indicative Plans shall also be used for the proposed design solution.
3. When calculating travel times from the proposed design solution, VISSIM must be run at least 5 times with the average values reports in the table above.

### Intersection

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<td></td>
<td>Roundabout</td>
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**Notes:**
1. All turn bays shall be designed to completely store the maximum queue length for the applicable turning movement. Queue length will be determined by the Design-Builder’s proposed model.
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<td>Spillback</td>
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<td>Queue Length</td>
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**Note:** When calculating MOE’s from VISSIM, the model must be run at least 5 times with the average values reported in the corresponding tables.
18.3.2.3 Intersection Analysis

All existing turning movements and access at each individual intersection must be maintained. A detailed intersection analysis will be required for all intersections within the project area to determine the following:

- HCM Level of Service will be used to document performance measure at the intersection level. The anticipated amount of delay per vehicle will be determined using delay results from VISSIM with the Level of Service definitions from the Highway Capacity Manual.

- Safety at intersections can be jeopardized by a number of factors associated with a myriad of geometric characteristics. For the purposes of this project, a quantitative evaluation of safety will look at turn bay overflows.

- Throughput can be measured by looking at how many vehicles are unserved by the signal system. Poor results can be indicative of a substandard design. Therefore, queues at all minor road approaches must clear 100% of the time in no more than two cycle lengths. In addition, all minor road approaches must operate at LOS D or better with the following exceptions:
  - Woodbury Centre: LOS E during PM Peak Hour

18.3.2.4 Corridor Analysis

A full Corridor assessment will be required along the segment of Route 32 between Woodbury Commons North and the US 6 EB On-Ramp. There are currently eight signalized intersections within the 0.8 mile segment of the Route 32 corridor included in this project. While service levels are an important component of traffic flow, equally important is the coordination of these devices to allow access to and from NYS Route 17 as well as for smooth and efficient flow through the Route 32 corridor itself. The corridor assessments should determine the following:

- **Progression**, or how well a corridor processes vehicular demand with as little stopping or delay as possible.

- **Travel Time** is the amount of time that the general public must expend in order to complete their trip through a given system.

18.3.3 Curb

Highway curb material shall match that of the adjacent highway. Curb type shall be VF150. Generally, Concrete Curb shall be used on Route 32.

18.3.4 Barrier Systems and Impact Attenuators

The Design-Builder shall remove and dispose of all existing barrier systems within the Project limits and replace with barrier systems to current NYSDOT Standards.
The limits of work for guide rail and 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.

**18.3.5 Park and Ride Facility (s)**

Park and ride facility(s) shall be constructed as part of this project. Access to the lot(s) shall have a minimum of one access point off Loeey Lane from Route 32 at signal (E4) via Loeey Lane. It shall maximize the number of stalls based on available ROW, but shall be no less than 200 standard stalls, with the corresponding required number of disabled stalls and four (4) electric car charging station stalls. The facility shall also utilize a Parking Lot Management System that is capable of monitoring and displaying the number of available parking spaces. The Design-Builder shall maintain or temporarily relocate 100 Park and Ride spaces of the existing Park and Ride facility that is accessed from Loeey Lane and adjacent to Route 32 throughout the the project construction. Should the Design-Builder decide to temporarily relocate the 100 spaces, the spaces shall be relocated within the project limits.

The Bus Station at the Park and Ride facility shall be sized to fit two busses along the loading zone. The station shall utilize solar power and high efficiency lighting. Station shall have capacity of sheltering a minimum of 50 people.

The Design-Builder is responsible for the design and construction of curbing, drainage, electric service and striping.

*The park and ride facility shall be provided with networking capability to allow for payment processing of the electric charging stations.*

**18.3.6 Clear Zone**

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

**18.3.8 Roundabout**

The Design-Builder shall design any roundabout which might be incorporated in its design solution, in accordance with the NYSDOT Highway Design Manual. The Roundabout must operate at an overall LOS A or better.

**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.
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

All DB Team personnel and employees shall be required to obtain clearance from the School District prior to engaging in any work on or immediately adjacent to school property.