KOSCIUSZKO BRIDGE PROJECT - (BIN 1075699)

PIN X731.24, Contract D900011

DB CONTRACT DOCUMENTS

ADDENDUM #7

November 19, 2013
Modification to the Request for Proposals
Kosciuszko Bridge Project
PIN X731.24, Contract D900011

General Instructions

Delete Pages B-1, B-7, B-8, B-18 and B-21 of Instructions to Proposers, Appendix B – Technical Submittal and substitute with the attached revised Pages B-1, B-1A, B-7, B-8, B-18, B-18A and B-21.

Delete Form SP of Instructions to Proposers, Appendix D – Forms and substitute with the attached revised Form SP.

Delete Instructions to Proposers, Appendix F – Abbreviations and Definitions and substitute with the attached revised Appendix F – Abbreviations and Definitions.

Delete Pages 9, 10, 11, 11A and 12 of the DB Contract Document, Part 1 - DB Agreement and substitute with the attached revised Pages 9, 10, 11, 11A, 12 and 12A.

Delete Pages 2, 7 thru 25, 91, 103 and 153 of DB Contract Document, Part 2 – DB Section 100 General Provisions and substitute with the attached revised Pages 2, 7 thru 25, 91, 103 and 153.

Delete Pages A-3 and A-4 of the DB Contract Document, Part 2 - Appendix 112A – Construction Quality Control Inspection and substitute with the attached revised Pages A-3 and A-4.


Delete Pages 1 thru 4 of DB Contract Document, Part 2, Appendix 112C – Attachment 1 and substitute with the attached revised Pages 1 thru 4.

Delete Section 4.2.1 of the DB Contract Document, Part 5 – Special Provisions, SP.4 Stay Cables and substitute with the attached revised Section 4.2.1.


B1.0 GENERAL INSTRUCTIONS

This ITP Appendix B provides the general instructions and establishes the content and formatting requirements for the Technical Proposal, Volumes 2, 2A and 2B.

Each Proposer shall submit the Technical Proposal required pursuant to this ITP Appendix B, organized, separated and labeled in accordance with the checklists in Table B, B1 and B2.

The submittals should be limited to the page limitations (if any) specified in this ITP Appendix B. Each sheet shall be 8.5" by 11" and printed double sided, unless otherwise stated below. Proposers may utilize 1-11"x17” sheet in place of 2-8.5”x11” sheets if desired. Text shall be in a standard font, a minimum of ten points in height, single-spaced. All design drawings submitted with Proposals shall be printed single-sided on 11” by 17” sheets, and all as-printed text font sizes on plans shall be at least 8 points or per NYSDOT HDM Standards.

B1.1 EXECUTIVE SUMMARY

B1.1.1 Base Project

The Proposer should include an Executive Summary explaining the Proposer’s overall approach to the Base Project and the key aspects of the Proposal. The Executive Summary shall not include any reference to the Base Project Plus the Option Proposal or any ATCs associated with the Base Project Plus the Option. The Executive Summary shall be written using non-technical language and shall contain sufficient information for reviewers with both technical and non-technical backgrounds to become familiar with the Proposal. It shall not include any information that might lead the reader to determine the Proposal Price. The Executive Summary shall not include any information that is not contained elsewhere in the Proposal.

The Executive Summaries will be reviewed prior to the Evaluation and if they contain any reference to cost or to the Base Project Plus the Option the Executive Summary will be removed from the Proposal.

B1.1.2 Base Project Plus the Option

The Proposer should include an Executive Summary explaining the Proposer’s overall approach to the Base Project Plus the Option and the key aspects of the Proposal. The Executive Summary shall not include any reference to the Base Project Proposal or any ATCs associated with the Base Project. The Executive Summary shall be written using non-technical language and shall contain sufficient information for reviewers with both technical and non-technical backgrounds to become familiar with the Proposal. It shall not include any information that might lead the reader to determine the Proposal Price. The Executive Summary shall not include any information that is not contained elsewhere in the Proposal.

The Executive Summaries will be reviewed prior to the Evaluation and if they contain any reference to cost or to the Base Project the Executive Summary will be removed from the Proposal.
B2.0 KEY PERSONNEL

The Proposer should include a resume (maximum of two 8.5” x 11” pages per person) for each of the Key Personnel identified in the Instruction to Proposers – General Instructions, outlining his/her experience and qualifications. In addition, the Proposer shall include Form R – Summary Individual’s Experience.

The content of each resume, and the sequence of presentation, should be as listed below:

A. Proposed role on Project;

B. Relevant licenses and registrations;

C. Total years of professional experience and years of experience performing the work the individual would perform on this Project;

D. Relevant project experience including project names, locations and total construction costs; the individual’s start and end dates on each project; the individual’s role on each project; the duties performed on each project; and the owner’s current contact information, including telephone numbers and e-mail addresses;

E. History of employment with participant;

F. Percent time (percentage of working time) allocated/committed to the Project for each 12 month period of the Project from NTP;

G. If more than one key position is to be filled by the same individual, so indicate; and

H. Three (3) references including the name, position, company, or agency and current telephone number and e-mail address for each reference. References should be owners or clients for whom the individual has performed project work for in the past five (5) years and should not be current employers of the individual.

The Proposer should include Form KP in Volume 1 to communicate any approved changes in
In addition, the Proposer should provide colored night time renderings of the proposed lighting concept, along with supporting narratives that address:

E. Spacing and location of poles, types of luminaires, and controls including meeting requirements of New York City Department of Transportation;

F. Aesthetic lighting plans for the main span structure (inclusive of towers, cables, deck, under-structure, and piers), the approach structures, and the bikeway/walkway from all primary perspectives and demonstrating compatibility among these elements;

G. Maintenance access to luminaries and proposed vandalism protection;

H. Proposed methods to address concepts discussed in the Revaluation Statement to minimize impacts on migrating birds; and

I. Proposed methods to meet Dark Sky goals and minimize light spill on the community.

B3.4.2 Base Project Plus the Option

The Proposer should provide a Visual Quality and Lighting Plan include a narrative describing the proposed construction methods and construction sequence for the Base project plus the Option that meets all of the requirements outlined in Section B3.4.1 above.

B3.5 GEOTECHNICAL WORK PLAN

The Proposer should submit an Initial Geotechnical Work Plan that should include:

A. A summary of the Proposer’s knowledge and understanding of the geotechnical, geologic, hydrogeology and seismic settings of the Project site and how the nature and behavior of the soil, rock, groundwater and subsurface conditions will affect the design and methods of construction;

B. Minimum numbers, depths and types of subsurface investigations that the Proposer would, if awarded the Contract, perform, in order to facilitate the design and construction of the Base Project and the Base Project plus the Option, including a narrative of why the Proposer is proposing the specific subsurface investigations and the in-situ tests and laboratory tests the Proposer intends to perform;

C. Anticipated design approach and method of analysis to determine the site specific seismic response spectra and liquefaction assessment for the design earthquakes.

B3.6 ENVIRONMENTAL COMPLIANCE PLAN

The Technical Proposal should provide an Initial Environmental Compliance Plan that describes how the Proposer will comply with applicable environmental and permitting commitments and requirements during the performance of the design and construction Work. The Initial Environmental Compliance Plan should:

A. Describe how the Proposer intends to comply with the Project’s environmental requirements and commitments, including the environmental requirements in the Contract Documents and the EIS. Describe how the Proposer will identify, track, verify and report that these requirements and commitments have been met;

B. Identify the mitigation plans that the Proposer will develop for environmentally sensitive aspects of the Work, addressing potential Work activities related to the natural environment, physical environment, and cultural and historic resources, including the
monitoring, treatment and discovery of existing and unknown archaeological and/or cultural resources encountered throughout the Contract term; and

C. Explain how the Proposer will integrate environmental compliance into the construction activities in the Creek, and manage their mitigation and monitoring.

The Initial Environmental Compliance Plan shall follow the format for the Environmental Compliance Plan given in Part 3 – Project Requirements, Section 3.2.6.1.

B4.0 MANAGEMENT PLANS

The Proposer should submit initial Management Plans relating to management aspects of the Project. Each initial plan should outline the key features of that particular aspect and how it will be addressed during the Contract. Each initial plan should be capable of being developed during the early stages of the Contract into a full comprehensive plan for that aspect in accordance with the requirements of the Contract Documents.

The Proposer should submit the following components of the overall Project Management Plan:

A. Overall Design-Build Team Organization Plan;
B. Design Management Plan;
C. Construction Management Plan;
D. Transportation Management Plan;
E. Project Risk Management Plan;
F. Quality Control Plan (Part 2 - DB §113)

In the above list, references in parenthesis relate to the Contract Document requirements for the relevant plan after Contract award. The Proposer may refer to these references for assistance in understanding the requirements for the initial plans.

Each component of the Project Management Plan described below should be capable of being developed by the Design-Builder during early stages of the Contract into a full comprehensive plan for that aspect in accordance with the requirements of the Contract Documents.

B4.1 OVERALL DESIGN-BUILD TEAM ORGANIZATION PLAN

The Proposer should include an Overall Design-Build Team Organization Plan describing 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 Proposer should include an organization chart (on an 11"x17" 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 Proposer should provide resumes (maximum of two 8.5" x 11" pages per person) for all
with all as-printed font sizes at least 8 point; and (ii) electronically in Oracle Primavera® P6 in
the Department’s P6 Enterprise System.
The Proposer should also provide a completed Form SCD, Schedule of Contract Dates.

The Visualization can be submitted in a compliant digital format, based on the conforming
software option selected by the Proposer that accompanies the submission. The Proposers
may export the final schedule and combine it with the visualization software in accordance with
the requirements of the RFP. The submission must reflect the final version of the “Initial Project
Schedule” that resides on the DOT’s server and this will be verified by DOT.

B5.2.2 Base Project plus the Option Baseline Schedule
The Proposer should include an Initial Baseline Schedule and Form SCD, Schedule of Contract
Dates, for the Base Project plus the Option that meets all of the requirements outlined in Section
B5.2.1 above. The following milestones shall be added to the Proposer’s Baseline Schedule for
the Base Project Plus the Option:

- Department Option to Construct the West Main Span (Start Milestone)
- Department Option to Construct the West Main Span (Finish Milestone)

B6.0 PROJECT SUPPORT

B6.1 PUBLIC INVOLVEMENT PROGRAM SUPPORT PLAN

The Department has implemented a Kosciuszko Bridge Project Public Involvement Program
(PIP); see Part 3 Project Requirement 8 – Public Involvement. The goal of the PIP is to provide
the public and agencies timely information throughout the design and construction process.

The Proposer should include an Initial PIP Support Plan which should describe the Proposer’s
support to the Department in their implementation of the PIP.

The Proposer should include an Initial PIP Support Plan that describes how support will be
provided in the public involvement activities including but not limited to:

A. Project Website: The Department will host and maintain the Project’s website. The Initial
PIP Support Plan should describe support to the Department in the development and
maintenance of the site to give the greatest positive impact to the viewing community.

B. Project Newsletter: The Initial PIP Support Plan should include providing support for the
preparation of a Project newsletter to provide the public with updates on the Project.

C. Weekly Press Releases: The Design-Builder shall prepare draft weekly press releases.
The Initial PIP Support Plan should describe preparation of the press releases.

D. Technical Media: The Initial PIP Support Plan should include for the preparation of public
information videos for use throughout the duration of the Project in various public
involvement activities. The Initial PIP Support Plan should include for state-of-the-art
video and graphic methods for depicting various aspects of the Project, along with other
technical media described in Part 3 Project Requirement 8 – Public Involvement.
E. Public Involvement Meetings: The Initial PIP Support Plan should detail the proposed support to public involvement meetings, including providing applicable photos, graphics, visualizations and drawings.
### Table B1

**Format of Volume 2A**

<table>
<thead>
<tr>
<th>Proposal Component (Base Project Only)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volume 2A, Section 2 – Technical Solutions Submittal</strong></td>
<td></td>
</tr>
<tr>
<td>Executive Summary (Base Project) (maximum 2 pages)</td>
<td>B1.1.1</td>
</tr>
<tr>
<td>Constructability Plan (Base Project) (maximum 10 pages)</td>
<td>B3.2.1</td>
</tr>
</tbody>
</table>
| Visual Quality and Lighting Plan (Base Project)  
  (Visual Quality: maximum 3 pages plus up to 7 concept drawings and 4 color renderings from defined viewpoints)  
  (Lighting: maximum 2 pages plus up to 5 plans and 3 color renderings) | B3.4.1 |
| **Volume 2A, Section 4 – Schedule (maximum 50 pages)** | |
| Initial Phasing/Sequencing Plan (Base Project) | B5.1.1 |
| Initial Baseline Schedule and Form SCD (Base Project) | B5.2.1 |

### Table B2

**Format of Volume 2B**

<table>
<thead>
<tr>
<th>Proposal Component (Base Project Plus the Option Only)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volume 2B, Section 2 – Technical Solutions Submittal</strong></td>
<td></td>
</tr>
<tr>
<td>Executive Summary (Base Project Plus the Option) (maximum 2 pages)</td>
<td>B1.1.2</td>
</tr>
<tr>
<td>Constructability Plan (Base Project Plus the Option) (maximum 10 pages)</td>
<td>B3.2.2</td>
</tr>
</tbody>
</table>
| Visual Quality and Lighting Plan (Base Project Plus the Option)  
  (Visual Quality: maximum 3 pages plus up to 7 concept drawings and 4 color renderings from defined viewpoints)  
  (Lighting: maximum 2 pages plus up to 5 plans and 3 color renderings) | B3.4.2 |
| **Volume 2B, Section 4 – Schedule (maximum 50 pages)** | |
| Initial Phasing/Sequencing Plan (Base Project Plus the Option) | B5.1.2 |
| Initial Baseline Schedule and Form SCD (Base Project Plus the Option) | B5.2.2 |
FORM SP  
SCHEDULE OF PRICES FORM  
(BASE PROJECT)  

Proposer:______________________________________________________________

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Name</th>
<th>Price (1)</th>
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</thead>
<tbody>
<tr>
<td>800.060000115</td>
<td>Design Build – Construction Work</td>
<td></td>
</tr>
<tr>
<td>800.04000015</td>
<td>Design Build – Force Account Work</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal A</strong></td>
<td></td>
</tr>
<tr>
<td>800.05000015</td>
<td>Design Build – Site Mobilization (Maximum 4% of Subtotal A)</td>
<td>$25,000,000.00</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal B (Sum of Subtotal A and Site Mobilization)</strong></td>
<td></td>
</tr>
<tr>
<td>800.01000015</td>
<td>Design Build – Design Services</td>
<td></td>
</tr>
<tr>
<td>800.02000015</td>
<td>Design Build – Construction Inspection Services</td>
<td></td>
</tr>
<tr>
<td>800.03000015</td>
<td>Design Build – Quality Control Services</td>
<td></td>
</tr>
<tr>
<td><strong>800.09000015</strong></td>
<td>Design-Build – Partnering Workshop</td>
<td>$50,000.00</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL PROPOSAL PRICE</strong></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1) Proposers shall complete Form SP (Base Project) using the excel spreadsheet located on the Department’s Project web site.

2) Subtotal B will be the value used to calculated the 51% Prime/DB self work requirement, less the Self Performance Specialty Items included in Part 5 – Special Provisions - SP.21 Self Performance Specialty Items.

Instructions:
1) Enter Lump Sum Price for each Price Item in the white, non-shaded cells.
FORM SP
SCHEDULE OF PRICES FORM
(BASE PROJECT PLUS THE OPTION)

Proposer:______________________________________________________________

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Name</th>
<th>Price (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>800.06000115</td>
<td>Design Build – Construction Work</td>
<td></td>
</tr>
<tr>
<td>800.04000015</td>
<td>Design Build – Force Account Work</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal A</strong></td>
<td><strong>$25,000,000.00</strong></td>
</tr>
<tr>
<td>800.05000015</td>
<td>Design Build – Site Mobilization (Maximum 4% of Subtotal A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal B (Sum of Subtotal A and Site Mobilization)</strong></td>
<td></td>
</tr>
<tr>
<td>800.01000015</td>
<td>Design Build – Design Services</td>
<td></td>
</tr>
<tr>
<td>800.02000015</td>
<td>Design Build – Construction Inspection Services</td>
<td></td>
</tr>
<tr>
<td>800.03000015</td>
<td>Design Build – Quality Control Services</td>
<td></td>
</tr>
<tr>
<td>800.09000015</td>
<td>Design-Build – Partnering Workshop</td>
<td><strong>$50,000.00</strong></td>
</tr>
</tbody>
</table>

**TOTAL PROPOSAL PRICE**

Notes:
1) Proposers shall complete Form SP (Base Project Plus the Option) using the excel spreadsheet located on the Department’s Project web site.

2) Subtotal B will be the value used to calculated the 51% Prime/DB self work requirement, less the Self Performance Specialty Items included in Part 5 – Special Provisions - SP.21 Self Performance Specialty Items.

Instructions:
1) Enter Lump Sum Price for each Price Item in the white, non-shaded cells.
KOSCIUSZKO BRIDGE PROJECT – PHASE 1
(BIN 1075699)

PIN X731.24, Contract D900011

INSTRUCTIONS TO PROPOSERS

APPENDIX F

ABBREVIATIONS AND DEFINITIONS

Addendum #7 - November 19, 2013
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<th>Page</th>
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</thead>
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<td>1</td>
</tr>
<tr>
<td>DEFINITIONS</td>
<td>2</td>
</tr>
</tbody>
</table>
This page is intentionally left blank.
This RFP includes abbreviations and specific defined terms as indicated below.

**ABBREVIATIONS**

Wherever the following abbreviations are used in these Contract Documents, they are to be construed the same as the respective expressions represented. Some of these abbreviations may be acronyms and may appear without periods.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
</tr>
<tr>
<td>CD</td>
<td>Compact Disc</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CPM</td>
<td>Critical Path Method</td>
</tr>
<tr>
<td>CQAE</td>
<td>Construction Quality Assurance Engineer</td>
</tr>
<tr>
<td>CQCE</td>
<td>Construction Quality Control Engineer</td>
</tr>
<tr>
<td>DB</td>
<td>Design-Build</td>
</tr>
<tr>
<td>DBE</td>
<td>Disadvantaged Business Enterprise</td>
</tr>
<tr>
<td>DEC</td>
<td>NYS Department of Environmental Conservation</td>
</tr>
<tr>
<td>DEP</td>
<td>NYC Department of Environmental Protection</td>
</tr>
<tr>
<td>DOH</td>
<td>NYC Department of Health</td>
</tr>
<tr>
<td>DONSI</td>
<td>Determination of No Significant Impact</td>
</tr>
<tr>
<td>DOT</td>
<td>New York State Department of Transportation</td>
</tr>
<tr>
<td>DQAE</td>
<td>Design Quality Assurance Engineer</td>
</tr>
<tr>
<td>DQCE</td>
<td>Design Quality Control Engineer</td>
</tr>
<tr>
<td>EOR</td>
<td>Engineer of Record</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>FDNY</td>
<td>New York City Fire Department</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>IA</td>
<td>Independent Assurance</td>
</tr>
<tr>
<td>ISA</td>
<td>Initial Site Assessment</td>
</tr>
<tr>
<td>ITP</td>
<td>Instructions to Proposers</td>
</tr>
<tr>
<td>JV</td>
<td>Joint Venture</td>
</tr>
<tr>
<td>LLC</td>
<td>Limited Liability Company</td>
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<tr>
<td>LSE</td>
<td>Lead Structural Engineer</td>
</tr>
<tr>
<td>M/W/DBE</td>
<td>Minority/Women/Disadvantaged Business Enterprise</td>
</tr>
<tr>
<td>MBE</td>
<td>Minority-owned Business Enterprise</td>
</tr>
<tr>
<td>M.U.R.K.</td>
<td>Manual on Uniform Record Keeping</td>
</tr>
<tr>
<td>MUTCD</td>
<td>Manual of Uniform Traffic Control Devices</td>
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<tr>
<td>N/A</td>
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<tr>
<td>NCR</td>
<td>Non-Conformance Report</td>
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<tr>
<td>NEMA</td>
<td>National Electrical Manufacturers Association</td>
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<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
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<tr>
<td>NTP</td>
<td>Notice to Proceed</td>
</tr>
<tr>
<td>NYC</td>
<td>City of New York</td>
</tr>
<tr>
<td>NYS</td>
<td>New York State</td>
</tr>
<tr>
<td>NYCDOT</td>
<td>New York City Department of Transportation</td>
</tr>
<tr>
<td>OCMC</td>
<td>Office of Construction Mitigation and Coordination</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration, United States</td>
</tr>
<tr>
<td>PI</td>
<td>Public Information</td>
</tr>
<tr>
<td>PM</td>
<td>Project Manager</td>
</tr>
</tbody>
</table>
DEFINITIONS

All capitalized terms used in the ITP and not otherwise defined herein, including in this ITP Appendix F (Abbreviations and Definitions), shall have the meanings ascribed to such terms in the Contract Documents, Part 2, DB §101.

“Accept/Acceptance” - The Department is responsible for acceptance activities on this Project. Acceptance will be carried out through independent inspections and testing (Agency Quality Assurance) and the Department will incorporate Contractor Quality Control inspection and test data in the acceptance decision once the data has been verified.

“Addenda/Addendum” means supplemental written additions, deletions, and modifications to the provisions of the RFP issued by the Department, after the date of issuance of the RFP.

“Advertisement” means a public announcement inviting prospective Proposers to obtain an RFQ or RFP and submit an SOQ or a Proposal. The Advertisement shall include a brief description of the Work proposed to be the subject of the procurement, with an announcement where the RFQ may be obtained, the terms and conditions under which SOQs will be received, and such other matters as the Department may deem advisable to include therein.

“Affiliate” means:
A) Any Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with the Design-Builder or any Principal Participant.
B) An Affiliate may also be any Person for which 10% or more of the equity interest in such Person is held directly or indirectly, beneficially or of record, by the following:
  1) The Design-Builder;
  2) Any Principal Participant; or
  3) Any Affiliate of the Design-Builder under part (A) of this definition.

For purposes of this definition, the term “control” means the possession, directly or indirectly, of the power to cause the direction of the management of a Person, whether through voting securities, by contract, by family relationship, or otherwise.

“Alternative Technical Concept” means a concept that deviates from requirements set forth in the Request for Proposals and that has been included in the Proposal with the Department’s
prior written approval in accordance with the Instructions to Proposers, based on a
determination by the Department that the proposed end product based on the deviation is equal
to or better than the end product absent the deviation and approval of any deviations from the
Project Environmental Approvals.

“Award” means the decision of the Department to accept a responsive Proposal from a
responsible Proposer that provides the best value to the Department for the Work identified in
the RFP, subject to the execution and approval of a satisfactory Contract, provision of Labor
and Material and Performance Bonds to secure the payment and performance thereof, provision
of such insurance as is required under the Contract, and the satisfaction of such other
conditions as may be specified or otherwise required by law.

“Baseline Progress Schedule” means the time-scaled, Critical Path network schedule,
updated from time to time in accordance with the Contract and depicting the subordinate
activities and their durations, sequences, and interrelationships that represent the Design-
Builder’s Work plans and the Design-Builder’s Work Breakdown Structure WBS for designing,
constructing, and completing the Project.

“Bridge (Approaches and Connectors) Lead Designer” means the Design-Builder’s
designated person who working under the direction of the Design Manager shall have primary
responsibility for the design of all Approach and Connector Structures of the Project. Such
individual shall be a registered Professional Engineer in the State of New York.

“Bridge (Main Span) Lead Designer” means the Design-Builder’s designated person who
working under the direction of the Design Manager shall have primary responsibility for the
design of the Main Span Cable Stayed Bridge(s) of the Project. Such individual shall be a
registered Professional Engineer in the State of New York with experience in the design of cable
Stayed Bridges.

“Clarifications” means a written or oral exchange of information that takes place between a
Proposer and the Department after the receipt of all SOQs during the evaluation process. The
purpose of Clarifications is to address minor ambiguities, omissions, errors or mistakes and
clerical revisions in an SOQ.

“Commissioner” means the Commissioner of the New York State Department of
Transportation.

“Competitive and Reasonable” means a Proposer’s proposed Lump Sum Price for the
Contract that does not exceed 150% of the Lump Sum Price for the Contract included in the
selected Best Value Proposal.

“Construction Inspection (CI)” means to inspect all construction operations and to enforce all
safety measures (for employees and the traveling public) performed by the Design-Builder
Contractor to ensure conformance with the contract documents. This includes performing daily
inspection and testing activities in accordance with all the requirements set forth in Department
policies, manuals, engineering bulletins, and engineering instructions; preparation of applicable
MURK forms; preparation of monthly estimates; monitoring compliance to safety procedures,
including fall protection and work zone traffic control (WZTC) requirements; monitoring
compliance to environmental requirements. Construction Inspection also includes Contract
Administration functions including, but not limited to keeping required records, monitoring the
DB Contractor’s progress, monitoring certified payroll compliance and processing of payments,
monitoring adherence to Equal Opportunity and Labor requirements contained in the contract, taking
measurements as required for payment, and maintaining a contemporaneous project diary
documenting conformance with the contract documents. The Scope of Work to be performed
as part of the Construction Inspection task may be changed after the RFQ Phase.

“Construction Inspection Professional Engineering Firm” means an independent
Engineering firm, licensed in New York State to perform Engineering Services and having
experience in Construction Inspection as defined herein. This firm shall be included as part of
the Proposer’s team during the RFP Phase and shall be hired by the Design-Builder to perform
Construction Inspection for the Project. The Construction Inspection Professional Engineering
Firm shall report to the Department and supervise the Materials Testing Firm or Laboratory
performing sampling and testing of materials.

“Construction Manager” means the Design-Builder’s designated representative who leads
construction activities of the Design-Build Contract, including overall construction oversight,
assignment of the construction workforces, coordination of the construction workforces, etc.

“Construction Quality Assurance Engineer” means the Department’s representative with
primary responsibility for monitoring and/or auditing the Design-Builder’s construction and
environmental field activities for compliance with the Contract’s requirements and the Design-
Builder’s Quality Control Plan.

“Construction Quality Control Engineer” means the Design-Builder’s designated
representative who leads the Construction QC activities. The Construction QC Engineer, or
his/her designees, shall be delegated the authority to actively monitor the quality of materials
and workmanship and to make necessary needed improvements to the quality of Work,
including the suspension of the Work if required.

“Construction Subcontractor” means a subcontractor on the DB Proposer’s team that will be
involved in the construction of the Project.

“Constructor” means a Principal Participant or subcontractor retained by the Design-Builder,
who is involved in the actual construction of the Project.

“Contract” means the written agreement between the Department and the Design-Builder
setting forth the obligations of the parties with respect to the Project, including, but not limited to,
the performance of the Work, the furnishing of labor and materials, and the basis of payment,
and including all provisions required by law to be inserted in the Contract whether actually
inserted or not. The Contract will include the Contract Documents and any amendments,
supplemental agreements, and Change Orders that are required to complete the design and
construction of the Work in an acceptable manner, including authorized extensions thereof, all
of which constitute one instrument.

“Contract Documents” means the document identified as such in the Contract.

“DBE / Civil Rights Compliance Manager” means the Design-Builder’s designated person
who working under the direction of the Project Manager shall be responsible for monitoring all
Civil Rights Compliance requirements and achieving the DBE goals and EEO goals described in
the Contract documents.
“Deficiency” means a material failure of an SOQ to meet the Department’s requirements or a combination of significant Weaknesses in an SOQ that increases the risk of unsuccessful Contract performance to an unacceptable level.

“Department” means the New York State Department of Transportation.

“Design-Build (DB)” means a Project delivery methodology by which the Department contracts with a single firm that has responsibility for the design and construction of the Project under a single contract.

“Design-Build Team” See Design-Builder.

“Design-Builder” means the Team selected pursuant to the RFP that enters into the Contract with the Department to design and construct the Project. (Also referred to as the “Design-Build Team”).

“Design Manager” means the Design-Builder’s designated person who shall have primary responsibility for coordination and oversight of all the Project Designs including design plans, calculations, and specifications. He/She shall be a registered Professional Engineer in the State of New York.

“Design Quality Assurance Engineer” means the Department’s representative with primary responsibility for monitoring and/or auditing the Design-Builder’s design and engineering activities for compliance with the Contract requirements and the Design-Builder’s Quality Control Plan.

“Design Quality Control Engineer” means the person appointed by Design-Builder who reports directly to the Design-Builder’s Quality Manager and is responsible for the QC of all Work conducted by the Designer. The Design QC Engineer shall be a New York-licensed professional engineer with similar experience as the Design Manager. The Design QC Engineer shall ensure that checkers are assigned for each design discipline and for each Design Unit and that they are properly scheduled.

“Designer” means a Principal Participant, Specialty Subcontractor, or in-house designer that has primary responsibility for design services for the Project.

“Disadvantaged Business Enterprise (DBE)” means a for-profit, small business concern as defined pursuant to Section 3 of the federal Small Business Act (Public Law 85-536, as amended) and Small Business Administration regulations implementing it (13 CFR Part 121) that is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals and whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it, which meets the definitions set forth in 49 Code of Federal Regulations (CFR) 26.

“Engineer-in-Charge (EIC)” means the Department’s Project Manager or designated representative when used in the NYSDOT standard specifications. When used in the Archaeological Work Plan (AWP), the Construction Protection Plan (CPP), and the Stormwater Pollution Prevention Plan (SWPPP) Engineer-in-Charge (EIC) means the Design Builder’s Resident Engineer.
“**Environmental Compliance Manager**” means the Design-Builder’s designated person who working under the direction of the Project Manager shall have primary responsibility for ensuring that all of the Project’s Environmental requirements are satisfied.

“**Equity Participant**” means any Person holding (directly or indirectly) a 15% or greater interest in the Proposer.

“**Fabricator**” means an individual, partnership, firm, Limited Liability Company (LLC), corporation, or joint venture with which the Design-Builder subcontracts to assemble, construct, or otherwise substantially alter Material or supplies into assemblies, components, or finished items for inclusion into the Work prior to resale.

“**Fast Track Design**” means the process of performing the design of a project in increments of the final design for the purpose of allowing the project construction to begin before the final design of a project is completed. Fast Track Design will allow the project design and construction activities to overlap and occur simultaneously thereby shortening the total duration of those activities.

“**Foundations Lead Designer**” means the Design-Builder’s designated person who working under the direction of the Design manager shall have primary responsibility for the design of all Foundation elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

“**Geotechnical Instrumentation Engineer**” means the Design-Builder’s designated person who working under the direction of the Design Manager shall have the primary responsibility for the design, implementation and monitoring of all geotechnical instrumentation for the Project. Such individual shall be a registered Professional Engineer in the State of New York.

“**Good Faith Efforts (GFE)**” means the efforts to achieve a DBE goal or other DBE requirement which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement. Good Faith Efforts shall meet the requirements of 49 Code of Federal Regulations (CFR) 26.53.

“**Independent Assurance (IA)**” means activities that are undertaken in accordance with 23 CFR 637.203(a)(2), providing an unbiased and independent evaluation of all the sampling and testing procedures, equipment calibration, and qualifications of personnel (Design-Builder’s or Department’s) used in the Acceptance Program, including the Design-Builder’s QC. The Independent Assurance (IA) agent for the Project will be designated by the Department.

“**Instructions to Proposers (ITP)**” means those documents containing directions for the preparation and submittal of information by the Proposers in response to the RFP.

“**Lead Architectural Designer**” means the Design-Builder’s designated person working under the direction of the Design Manager who shall have the primary responsibility for the design of all Architectural elements of the Project. Such individual shall be a registered Professional Architect in the State of New York.

“**Lead Civil Engineer**” means the Design-Builder’s designated person who working under the direction of the Design Manager shall have primary responsibility for the design of all Highway and Traffic elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York.
“Lead Demolition Engineer” means the Design-Builder’s designated person who working under the direction of the Design Manager shall have the primary responsibility for the design, coordination and execution of the demolition of the existing bridge structures of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

“Lead ITS Engineer” means the Design-Builder’s designated person who working under the direction of the Design Manager shall have primary responsibility for the design of all Intelligent Transportation System elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

“Lead Public Involvement Person” means the Design-Builder’s designated person who working under the direction of the Project Manager shall have primary responsibility for supporting the Department’s implementation of the Kosciuszko Project Public Involvement Plan and supporting the Department in community relations, public information, and community outreach.

“Lead Principal Participant” means the Principal Participant that is designated by the Proposer as having the lead responsibility for managing the Proposer’s organization.

“Manufacturer” means a Manufacturer is an entity that operates or maintains a factory or establishment that produces on its premises the Material, Equipment, or supplies obtained by the Design-Builder for incorporation into the Project.

“Material” means any approved material acceptable to the Commissioner and conforming to the requirements of the Specifications.

“Materials Testing Firm or Laboratory” means an independent testing firm or Laboratory having experience in performing Quality Control activities as defined herein. This firm shall be included as part of the Proposer’s team during the RFP Phase and shall be hired by the Design-Builder to perform Quality Control sampling and Testing activities for the Project. The Materials Testing Firm or Laboratory shall report to the Construction Inspection Professional Engineering firm.

“Minority-owned Business Enterprise (MBE)” means a business enterprise, including a sole proprietorship, partnership, or corporation that is a small business at least 51% owned by one or more minority group members and meets the definition set forth in Article 15-A of the New York State Executive Law.

A) It is at least 51% owned by one or more minority group members;
B) It is an enterprise in which such minority ownership is real, substantial, and continuing;
C) It is an enterprise in which such minority ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise; and
D) It is an enterprise authorized to do business in the State and it is independently owned and operated.

“Non-responsive Price Proposal” means a Proposer’s Price Proposal which is incomplete or which contains mathematical errors.
“Notice to Proceed” means written notice to the Design-Builder to proceed with some or all of the Work as specified in the Contract including, when applicable, the beginning date of the Contract Time. See also, Work Order.

“Oversight” means actions by the Department to satisfy itself that the Design-Builder is designing, constructing and managing the Work in accordance with the Contract Documents. It includes actions identified in the Contract Documents by the terms QA, Independent Assurance, Verification Sampling and Testing, compliant/compliance, accept/acceptance, inspect/inspection, audit, ensure, certify, confirm, review, verify or terms of similar import. Department comments as a result of Oversight are conveyed to the Design-Builder through Consultation and Written Comment and shall be documented in a Non-Conformance Report if appropriate. Neither the activity of Oversight nor the lack of Consultation and Written Comment on the part of the Department shall be construed to relieve the Design-Builder and its organization from the responsibility and costs for meeting all Contract and regulatory requirements.

“Performance Bond” means the bond, in the form set forth in the RFP or as otherwise approved by the Department, approved form of security, executed by the Design-Builder and its Surety or Sureties, guaranteeing performance of all Work in compliance with the requirements of the Contract Documents, including all Orders on Contract, Amendments, and Supplemental Agreements pertaining thereto.

“Person” means any individual, firm, or a corporation, company, sole proprietorship, limited liability company (LLC), joint venture, voluntary association, partnership, trust, unincorporated organization, or other legal entity.

“Plans” means the official Design Plans and applicable Standard Sheets, which show the location, character, dimensions, and details of the Work to be performed. Also, the Design-Builder's Design Plans showing profiles, typical cross sections, and other details; Work Plans; or exact reproductions which show the location, character, dimensions, and general or specific details of the Work to be done.

“Price Proposal” means the portion of the Proposal described in either Appendix C1 or C2.

“Principal Participant” means any of the following entities:
   A) The Design-Builder (or Proposer);
   B) If the Proposer is a partnership, joint venture, or limited liability company (LLC), joint venture, voluntary association, partnership, trust, unincorporated organization, or other legal entity.
   C) Any Equity Participant.

“Professional Engineer” means a Professional Engineer licensed or otherwise authorized to practice engineering under Article 145 and registered or otherwise authorized under Article 130 or the New York State Education Law.

“Project” means the improvements to be designed and constructed by the Design-Builder and all other Work products to be provided by the Design-Builder in accordance with the Contract Documents. In the event that the Department selects the Base Project for Award, the Base
“Project Manager” means the Design-Builder’s designated representative responsible for all aspects of the Work, including construction oversight, design oversight, project finances, project scheduling, etc. Disputes regarding design or construction that cannot be resolved with the designer or in the field will be brought to the attention of the Design-Builder’s Project Manager for resolution.

“Project Superintendent” means the Design-Builder’s on-site designated representative who oversees the construction of the Design-Build Contract, including directing and coordinating the activities of the Design-Builder’s workforce and all subcontractors, ensuring that the work progresses according to schedule, and ensuring that material and equipment are delivered to the site on time, etc.

“Proposal” means a proposal submitted by a Proposer in response to the RFP, including any revisions thereto in response to a request for revisions to Proposals or through pre-award negotiations.

“Proposal Bond” means the security furnished with a Proposal to guarantee that the Proposer will enter into the Contract if the Proposer’s Proposal is accepted and satisfies all other conditions of Award.

“Proposal Due Date” means the date specified in the ITP on which the Proposal is due to the Department’s Designated Representative.

“Proposal Information” means the documents so designated in the ITP and submitted to the Department by the Proposer/Design-Builder in accordance with the ITP that will be included in the Contract Documents. The Proposal Information is part of the Quality Proposal.

“Proposer” means a Person on the Shortlist.

“Proposer’s Representative” means an individual authorized to bind a Proposer who is designated in writing by the Proposer (in the Proposer’s SOQ or other written notice to the Department’s Designated Representative) as the Proposer’s sole point of contact for the purposes of communications with the Department during the procurement of this Project.

“Qualified Costs” means the costs that directly support a certain cost objective (project). Examples of qualified costs (subject to limitations of any other contract stipulations such as limits on hourly rates or not to exceed Governmental travel rates) can include the following:

- Compensation of employees time charges related to project
- Cost of materials acquired, consumed, or expended related to project
- Cost of equipment utilized related to project
- Travel expenses incurred related to project

“Quality Assurance” means all planned and systematic Oversight actions by the Department necessary to is the Department’s process of forming an acceptance decision to insure the Design-Builder’s design, the incorporated materials on this project and the workmanship is meeting contract intent. The QA process includes all the planned and systematic Oversight actions that provide confidence that the Design-Builder is performing QC in accordance with the Quality Control Plan, that all Work complies with the Contract and that all Materials incorporated
in the Work, all Equipment, and all elements of the Work will perform satisfactorily for the purpose intended. Quality Assurance includes, but is not limited to, monitoring and verification of design through auditing, spot-checking and participation in the review of the design, and monitoring and verification of construction, manufacturing/process facilities and equipment, on site equipment and QC documentation through auditing, spot inspections and Verification Sampling and testing at production sites and the Project Site. Quality Assurance also includes Independent Assurance, consultation and provision of written comments by the Department, documentation of QA activities, final inspection and Final Acceptance.

**Quality Program** – The overall quality system and associated activities, including the Department’s QA and IA program, Design-Builder QC activities and associated Quality Control Plan that will assure materials and workmanship incorporated into the Project are in conformity with the Contract requirements, Design Documents and Project Specifications.

“**Quality Assurance Program**” means the overall quality program and associated activities including the Department’s Quality Assurance, Design-Builder Quality Control, the Contract’s quality requirements for design and construction to assure compliance with Department Specifications and procedures.

“**Quality Control**” means the total of all activities performed by the Design-Builder, Designer, Construction Inspection Professional Engineering Firm and the Materials Testing Firm or Laboratory, subcontractors, producers or manufacturers to ensure that the Work performed by the Design-Builder conforms to the Contract requirements of the Contract Documents. For design, Quality Control activities shall include, but not be limited to, procedures for design quality, checking, design review including reviews for constructability, and review and approval of Working Plans. For construction, Quality Control activities shall include, but not be limited to, procedures for materials handling and construction quality, inspection, sampling and testing of materials both on site and at the plant(s), field testing of materials, obtaining and verifying Materials Certifications, record keeping, and equipment monitoring and calibration production process control, and monitoring of environmental compliance. Quality Control also includes documentation of all QC design and construction efforts. The Scope of Work to be performed as part of the Quality Control task may be changed after the RFQ Phase.

“**Quality Control Plan**” means the Design-Builder’s plan for implementing the Design-Builder’s overall quality program and associated activities, including Design-Builder’s QC and procedures, to assure and document quality of design and construction activities through reviews, inspections, testing, internal communications, and necessary interfaces with the Department and the Department’s QA activities.

“**Quality Manager**” means the individual employed by the Design-Builder who is responsible for the overall QC program of the Design-Builder, including the quality of management, design, and construction. (also referred to as the “Quality Control Manager”)

“**Reference Documents**” means the documents provided with and so designated in the RFP. The Reference Documents, including Plans contained therein and/or so designated, are not Contract Documents and were provided to Design-Builder for informational purposes only and are relied upon at the Design-Builder’s own risk.

“**Request For Proposals (RFP)**” means a written solicitation issued by the Department (and as amended by any Addenda) seeking Proposals (including quality and price) to be used to identify
the Proposer offering the best value to the Department. The RFP will be issued only to Persons who are on the Short-List.

“Repairable Damage” means the extent of damage should be limited so that the structure can be restored to its pre-incident condition without replacement of structural members. Inelastic response may occur resulting in: concrete cracking, minor cover spalling and reinforcement yielding; minor yielding of structural steel members; some damage to secondary members and nonstructural components; some damage to masonry. Repair should not require complete closure of the bridge. Permanent offsets should be small and there should be no collapse.

“Request for Qualifications (RFQ)” means the written solicitation, including all Addenda thereto, issued by the Department seeking SOQs in order to identify and Short-List the Proposers to receive the RFP for the Project.

“Resident Engineer” means a Professional Engineer licensed in the State of New York, who directs the organization and coordination of the inspectors and the on-site Construction Quality Control inspection of the execution of the construction by the Design-Builder. He ensures that the construction is executed in accordance with the approved designs, drawings and specifications related to the work under construction.

“Risk Manager” means the individual employed by the Design-Builder who is responsible for the Design-Builder’s overall Risk Management program for the Project, including identifying and managing the risks identified in the management, design and construction of the Project.

“Safety Manager” means the Design-Builder’s designated person who working under the direction of the Project Manager shall have the primary responsibility for implementing and tracking safety measures for the Project and for ensuring that the Project is progressed safely and in accordance with the Design-Builders Safety Plan, the Contract requirements and the Safety Requirements of the Project. See also, Part 2, DB § 107-7.10.

“Seismic Specialist” means the Design-Builder’s designated person who working under the direction of the Design Manager shall have the primary responsibility for the seismic analysis and design of the structural elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

“Short-List” means the list of Persons that the Department determines are the best highly qualified potential Design-Builders for the Project, based on an evaluation of the SOQs submitted by such Persons.

“Specialty Subcontractor” means those consultants or subcontractors identified to perform Work critical to the success of the Project such as design, Construction Inspection, materials testing, demolition, environmental compliance, landscaping, or other specialty work.

“State” means the State of New York.

“Statement of Qualifications (SOQ)” means the information prepared and submitted by a Proposer in response to the RFQ.

“Strength” means a feature or aspect of the SOQ that exceeds the minimum requirements of the RFQ and increases the chance of successful Contract performance. A significant Strength in
the SOQ is a feature or aspect that exceeds the minimum requirements of the RFQ and increases the chance of successful Contract performance.

‘Subcontractor’ means any Person with whom the Design-Builder has entered into any Subcontract and any other Person with whom any Subcontractor has further subcontracted any part of the Work, at any tier. Suppliers and materialmen are excluded from the term. The term does not include any employee with an employment contract, or any employee organization with a collective bargaining agreement, who with the written consent of the Department, sublets any part of the Contract, an individual, firm, partnership, joint venture, LLC, or corporation to whom the Design-Builder, with the written consent of the Department, sublets any part of the Contract.

“Surety” means the corporate body properly licensed in the State which has issued the Performance and/or Labor and Material Bond.

“Test” means methods adopted by the Department and the Design-Builder to ascertain the quality, character, and acceptability of Materials and processes utilized in performing the Contract.

“Unbalanced Price Proposal” means a Price Proposal may be unbalanced either Materially or Mathematically. A Materially Unbalanced Price Proposal is a Price Proposal that generates a reasonable doubt that awarding the Contract to the Proposer submitting the price Proposal will result in the lowest ultimate cost to the Department. A Mathematically Unbalanced Price Proposal is a Price Proposal containing lump sum or Unit Price items that do not reasonably reflect the actual costs plus a reasonable proportionate share of the Proposer’s anticipated profit, overhead costs, and other indirect costs.

“Unit Price” means the price per unit of measure specified for items of Work in accordance with any unit priced Orders on Contract, the price established by the Contract for a specified unit quantity of Work that is measured for payment.

“Utility” means a Person, corporation, municipality, or public authority engaged in the distribution of electricity, gases, petroleum products, water, steam, the collection of wastewater, the operation of traffic control systems, or the provision of telecommunication services.

“Utility Owner” means the owner or operator of any Utility (including Persons and Governmental Persons).

“Verification Sampling and Testing” is conducted whenever the Design Builders Quality Control data (Construction Inspection and Sampling and Testing of Construction Materials) is used in the acceptance decision. Verification is performed by the Department, or its agent to validate the Design Builders data, or by a firm retained by the Department, to validate the Design-Builder’s QC sampling and test data that was used in the acceptance decision, the Design Builders Quality Control Process and the quality of the workmanship and product. The Department, or a firm retained by the Department, will perform Verification Sampling and Testing.

“Warranties” means the written commitments of the Design-Builder as set forth in the Contract regarding quality and performance over a specified period of time after Final Acceptance of the Project.
“Weakness” means a flaw in the SOQ that increases the risk of unsuccessful Contract performance. A significant Weakness in the SOQ is a flaw that appreciably increases the risk of unsuccessful Contract performance.

“Women-owned Business Enterprise (WBE)” means a business enterprise, including a sole proprietorship, partnership, or corporation that has the following attributes:

A) It is at least 51% owned by one or more US citizens or permanent resident aliens who are women;

B) It is an enterprise in which the ownership interest of such women is real, substantial, and continuing;

C) It is an enterprise in which such women ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise; and

D) It is an enterprise authorized to do business in the State and it is independently owned and operated.

“Work” means all of the administrative, design, engineering, real property acquisition support services, utility support services, procurement, legal, professional, manufacturing, supply, installation, construction, supervision, management, testing, verification, labor, materials, equipment, maintenance, warranty, documentation, and other duties and services to be furnished and provided by the Design-Builder as required by the Contract Documents, including all efforts necessary or appropriate to achieve final acceptance of the Project and to fulfill the Design-Builder’s warranties. In certain cases, the term is also used to mean the products of the Work.
9. **Waiver of Indemnities.** The Design-Builder waives any right of action it and/or its insurance carrier might have against the Department (including its employees, officers, commissioners or agents) for any loss that is covered by a policy of insurance that is required by this contract, where that right of action is based upon an indemnification from the Department or any third party. The Design-Builder waives any right of action it and/or its insurance carrier might have against the Department (including its employees, officers, commissioners or agents) for any loss, whether or not such loss is insured, where that right of action is based upon an indemnification from the Department or any third party.

10. **Subcontractor’s Liability Insurance.** In the event that any portion of the work described in this contract is performed by a subcontractor, the insurance requirements of this Article shall be incorporated into the subcontract agreement. Subcontractor insurance requirements shall include the requirements for Workers’ Compensation, Commercial General Liability, and, if applicable, Commercial Auto and/or Professional Liability. Excess or umbrella insurance is not required for subcontractors. Design-Builder shall require that Certificates of Insurance, meeting the requirements of the Department are provided to the Department documenting the insurance coverage for each and every subcontractor employed by them to do work under this contract.

**B. Insurance Requirements.** The types of insurance and minimum policy limits shall be as follows:

1. **Workers’ Compensation and Disability Insurance.** As required by State Finance Law §142, the Design-Builder shall maintain in force workers’ compensation insurance upon forms required by or acceptable to the Workers Compensation Board for all of Design-Builder’s employees. Design-Builder shall also maintain disability insurance as required by the Disability Benefits Law of the State of New York.

2. **Commercial General Liability Insurance.** The Design-Builder shall maintain an occurrence form commercial general liability policy or policies insuring against liability arising from premises (including loss of use thereof), personal injury or death, advertising injury, liability insured under an insured contract (including the tort liability of another assumed in a business contract) occurring or in any way related to the premises or occasioned by reason of the operations of Design-Builder. Such coverage shall be written on an ISO occurrence form (ISO Form CG 00 01 12 07 or a policy form providing equivalent coverage) in an amount of not less than $25,000,000.00 per occurrence and not less than $510,000,000.00 aggregate. Unless otherwise provided, the policy or policies of insurance providing the liability coverage shall include:
   a. Coverage for contractual liability assumed by the Design-Builder insured under an insured contract (including the tort liability of another assumed in a business contract).
   b. All insurance policies required by these specifications except workers’ compensation and professional liability shall be endorsed to provide coverage to the People of the State of New York, the State of New York, the Commissioner of Transportation, all employees of the Department of Transportation both officially and personally, any municipality in which the work is being performed, any public benefit corporation, railroad, public utility whose property or facilities are affected by the work, any consultant inspecting engineer or inspector working for or on the contract, and their agents or employees using ISO form CG 20 10 11 85, CG 20 37 07 04, CG 20 33 07 98 when used in combination with CG 20 37 07 04, or CG 20 33 10 01 or a policy form or forms providing equivalent coverage.
   c. Products-Completed Operations Coverage, as provided in the General Liability Policy, or in certain instances through ISO form CG 26 11 09 99 or suitable equivalent.
   d. Where contract work will be performed by unregistered off-road equipment, Design-Builder shall provide documentation of a blanket Pollution Liability policy, or an endorsement to cover short-term pollution events, ISO form CG 04 33 10 01 or equivalent.
   e. Coverage for claims for bodily injury asserted by an employee of an additional insured and any Employer Liability Exclusion which may otherwise operate to exclude such coverage shall be voided in this respect.
   f. For contracts that call for the performance of excavating, underground work, and/or the use of blasting equipment, Explosion, Collapse and Underground Hazards coverage (“XCU”) (for contracts that call for the performance of excavating, underground work, and/or the use of blasting equipment).
In addition to the additional insured requirements of 17.A.4 above, the policy shall also name as additional insured Phelps Dodge Refining Corporation and Sagres LLC.

3. **Commercial Automobile Insurance including liability and required coverage for New York.** In the event that automobiles are used in connection with Design-Builder’s business or operations with the Department, the Design-Builder shall maintain a commercial or other automobile policy or policies insuring against liability for bodily injury, death, or damage to property and other mandatory coverages, relating to the use, operation, loading or unloading of any of Design-Builder’s automobiles (including owned, hired and non-owned vehicles) on and around the project. This should be ISO form CA 00 01 10 01, CA 00 01 03 10 I 87 or a policy form providing equivalent coverage along with mandatory New York endorsements. Coverage shall be in an amount of not less than $1,000,000.00 for each accident.

In addition to the additional insured requirements of 17.A.4 above, the policy shall also name as additional insured Phelps Dodge Refining Corporation and Sagres LLC.

4. **Umbrella or Excess Liability Insurance.** The Design-Builder shall maintain an occurrence form umbrella liability policy or policies insuring against liability arising from premises (including loss of use thereof), operations, independent Design-Builders, products-completed operations, personal injury, advertising injury, liability insured under an insured contract (including the tort liability of another assumed in a business contract) occurring on or in any way related to the premises or occasioned by reason of the operations of Design-Builder, or arising from automobile liability as described above. Such coverage shall be written on an ISO occurrence form CU 00 01 12 07 or a policy form providing equivalent coverage. In the event that umbrella coverage is unavailable, equivalent excess coverage may be substituted. The minimum required limits for the umbrella/excess coverage shall be sufficient to provide, when combined with the Commercial General Liability Insurance, a total of not less than $100,000,000.00 per occurrence/aggregate.

In addition to the additional insured requirements of 17.A.4 above, the policy shall also name as additional insured Phelps Dodge Refining Corporation and Sagres LLC.

5. **Special Protective and Highway Liability Policy.** The Design-Builder shall maintain, separate and apart from its umbrella policy, a policy issued to and covering the liability of the People of the State of New York, The State of New York, the Commissioner of Transportation, all employees of the Department of Transportation both officially and personally, any municipality in which the work is being performed, any public benefit corporation, railroad, or public utility whose property or facilities are affected by the work, or any consultant inspecting engineer or inspector working for or on the project, and their agents or employees, against damages that the insured may be held legally liable to pay for property damage, personal injuries, or death that is caused by any occurrence that takes place within any location where work is to be or is being performed by Design-Builder, including at the location of any of the work. This should be ISO form CG 00 14 12 or a policy form providing equivalent coverage along with mandatory New York endorsements. Coverage shall be in an amount of not less than $5,000,000.00 per occurrence and at least $10,000,000.00 for each aggregate limit.

In addition to the additional insured requirements of 17.A.4 above, the policy shall also name as additional insured Phelps Dodge Refining Corporation and Sagres LLC.

6. **Design-Builder’s Risks.** The Design-Builder shall be responsible for obtaining any insurance it deems necessary to cover its own risks, including without limitation: (a) business interruption, such as gross earnings, extra expense, or similar coverage, (b) personal property, and/or (c) automobile physical damage and/or theft. In no event shall the Department be liable for any damage to, or loss of, personal property, or damage to, or loss of, an automobile that is covered by a policy of insurance that is required by this agreement, even if such loss is caused by the negligence of the Department.
7. **Professional Liability/Errors and Omissions.** The Design-Builder’s designer shall maintain at its own expense such insurance as is customary to compensate Department for any claims or losses that occur because of Designer’s errors, omissions, malpractice, or breach of professional obligations. Such policy or policies may be written on a claims-made form, so long as coverage is maintained to cover claims arising from the performance of services under this contract. Said coverage may be subject to a deductible of self-insured retention level of no more than $500,000.00 subject to approval by Department. It is also agreed that Department may withhold payment for services rendered under this contract in the event and to the extent any deductible in the event that a claim is asserted. Such coverage shall be written on a claims-made basis (or a policy form providing equivalent coverage) in an amount of no less than $10,000,000.00 per claim and $10,000,000.00 in the aggregate. The policy shall have a retroactive date no later than the date on which the RFP was issued. The policy shall have an extended reporting period of five years after Final Acceptance.

Additional insured endorsement CG 2032 07 04 shall be required to provide additional insured status to an engineer, architect, or surveyor not engaged by the insurance holder.

8. **Builders’ Risks Policy.** The Design-Builder shall procure and maintain a Builder’s Risk policy in a form such as ISO form CP 00 20 10 90 or a policy providing equivalent coverage, covering the perils insured under and including the special causes of loss form, including collapse, water damage, and transit and theft of building materials, with deductible not to exceed the amount of the bid deposit or $1,000,000, whichever is less, in non reporting form, with limits of coverage of not less than $100,000,000,000.00, covering the total value of work performed and equipment, supplies and materials at the location of the Work as well as at any off-site storage locations. The policy shall cover the cost of removing debris, including demolition as may be legally necessary by the operation of any law, ordinance or regulation, and for loss or damage to any owned, borrowed, leased or rented capital equipment, tools, including tools of their agents and employees, staging towers and forms, and property of Department held in their Design-Builder’s care, custody and/or control. Such policy shall name as insured, The People of the State of New York.

9. **Railroad Protective Liability Insurance.** The Contractor shall maintain at its own expense railroad protective liability policy of insurance in the name of the affected railroad and with limits of coverage of not less than $2,000,000.00 combined Bodily Injury Liability and/or Property Damage for each occurrence with a $6,000,000.00 Aggregate Limit applying separately to each annual period. Said policy shall be subject to the approval of the railroad and comply with Federal Aid Policy Guide 23 CFR 646 subpart A.

10. **Marine Protection & Indemnity.** The Design-Builder shall provide and maintain Marine Protection and Indemnity coverage under a marine policy providing coverage for all marine operations under the Contract, with a minimum limit of $5,000,000,000. When the limits of the Marine Policy procured are insufficient to meet the limits specified, the Design-Builder shall procure and maintain an excess with limits in excess of the primary; provided, however, that the total amount of insurance coverage is at least equal to the requirements set forth above. Such policies shall follow the same form as the primary policy. Any insurance maintained by the Department or any additional insured shall be considered excess of and shall not contribute with any other insurance procured and maintained by the Design-Builder including the marine policy, regardless of the “other insurance” clause contained in either parties’ policy. To the extent marine operations are to be conducted by a Subcontractor and not the Design-Builder directly, the Design-Builder may cause the Subcontractor to provide and maintain the requisite Marine Protective and Indemnity coverage.

11. **Pollution Legal Liability.** The Design-Builder shall procure, or otherwise obtain and maintain in full force and effect throughout the term of the contract, and for two years after completion hereof, pollution
legal liability insurance with limits of not less than $25,000,000 providing coverage for bodily injury and property damage, including loss of use of damaged property or of property that has not been physically injured. Such policy shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants or in the investigation, settlement or defense of any claim, suit, or proceedings against the Department arising from the Design-Builder’s work. Such policy shall contain an extended reporting period of three years following Final Acceptance. In addition to the additional insured requirements of 17.A.4 above, the policy shall also name as additional insured Phelps Dodge Refining Corporation and Sages LLC.

ARTICLE 18. INDEMNIFICATION

The Design-Builder shall be responsible for all damage to life and property due to negligent or otherwise tortious acts, errors or omissions of the Design-Builder in connection with its services under the Contract Documents. To the fullest extent permitted by law: (a) the Design-Builder shall indemnify, hold harmless, and release the Department and/or the State of New York, any municipality in which the Work is being performed; and/or any public benefit corporation, railroad or public utility whose property or facilities are affected by the Work from suits, claims, actions, damages, and costs of every name and description resulting from negligent or otherwise tortious acts, errors or omissions of the Design-Builder, or acts by the Design-Builder which infringe intellectual property rights or trade secrets, made in connection with the Work under this Contract and until the Final Acceptance thereof; (b) with respect to personal injury or property damage occurring after Final Acceptance and not covered by the indemnity in clause 107-27.1(a), the Design-Builder shall indemnify, hold harmless, and release the Department and/or the State of New York, any municipality in which the Work is being performed; and/or any public benefit corporation, railroad or public utility from suits, claims, actions, damages, and costs of every name and description resulting from negligent or otherwise tortious acts, errors or omissions of the Design-Builder in connection with its services under the Contract Documents; and (c) the Design-Builder shall indemnify, hold harmless, and release the Department’s Inspector from suits, claims, actions, damages, and costs involving personal injury and property damage resulting from the Design-Builder’s Work under the Contract during its prosecution and until the Final Acceptance thereof. The Department may retain such monies from the amount due the Design-Builder as may be necessary to satisfy any claim for damages recovered against the Department. any municipality in which the Work is being performed, any public benefit corporation, railroad, or public utility whose property or facilities are affected by the Work, or the Department’s Inspectors. The Design-Builder’s obligation under this paragraph shall not be deemed waived by the failure of the Department to retain the whole or any part of such monies due the Design-Builder, or where such suit, action, damages, and/or costs have not been resolved or determined prior to release of any monies to the Design-Builder under the Contract. Such obligation shall not be deemed limited or discharged by the enumeration or procurement of any insurance for liability for damages imposed by law upon the Design-Builder, Subcontractors, the Department, the State, any municipality in which the Work is being performed, any public benefit corporation, railroad, or public utility whose property or facilities are affected by the Work, or any Department consultants or contractors working relative to the Project.

The Design-Builder has the obligation, at its own expense, for the defense of any action or proceeding which may be brought against the parties specified in this Section. This obligation shall include the cost of attorney fees, disbursements, costs, and other expenses incurred in connection with such action or proceeding. The provisions of this section shall survive the expiration or termination of the Contract.

Without limiting the generality of the foregoing, Design-Builder’s obligation to indemnify, save harmless and release the Persons identified in this DB §107-27.1 specifically includes any suits, claims, actions,
damages, and costs of every name and description resulting from any spill or release or threatened spill or release of a Hazardous Material (i) attributable to the negligence, willful misconduct or breach of contract by Design-Builder, its Subcontractors or agents, or (ii) which was brought onto the Site by Design-Builder or any of its Subcontractors or agents.

Notwithstanding the foregoing, the Department reserves the right to join such action, at its sole expense, when it determines there is an issue involving a significant public interest.

Such obligation does not extend to those suits, actions, damages, and costs of every name which arise out of the sole negligence of the Department, the State of New York, any municipality in which the Work is being performed, any public benefit corporation, railroad, or public utility whose property or facilities are affected by the Work of the Project, or any Department consultants or contractors working relative to the Project, their agents, or their employees.

The Department will not rely on this indemnification as the sole basis for a direct cause of actions against the Design-Builder concerning liability arising solely out of pre-existing Hazardous Materials, provided the Design-Builder complies with the Contract Documents.

The Department will not bring a direct cause of action against the Design-Builder concerning liability arising solely out of changed ground water conditions that occur as the result of capping or loads on the Laurel Hill Site, provided the Design-Builder complies with the contract documents regarding capping requirements and load restrictions, unless the changed ground water conditions are the result of negligence or an intentional act on the part of the Design-Builder.

ARTICLE 19. LIQUIDATED DAMAGES

Time is an essential element of the Contract, and it is important that the Work be pursued vigorously to completion. The public is subject to detriment and inconvenience when full use of infrastructure cannot be made because of an incomplete Project.


Notwithstanding other terms set forth in the Contract Documents, the limit of the Design-Builder’s liability for liquidated damages, lane rental charges, or engineering charges arising from Design-Builder’s performance or non-performance of any Work under the contract Documents shall not exceed $60,000,000.

ARTICLE 20. INDEPENDENT CONTRACTOR.

The Design-Builder Agrees to the terms as an Independent Contractor described in Part 2, DB Section 107-1(b).
ARTICLE 21. NO CONFLICT OF INTEREST

The Design-Builder hereby agrees that this Contract has been secured without any apparent or real conflict of interest that would (1) compromise the integrity and fairness of the procurement process; (2) create circumstances where the Design-Builder obtained or appeared to obtain an unfair competitive advantage; or (3) compromise the interests of the Department and the People of the State of New York.

The Design-Builder further agrees that the Contract was secured without collusion or fraud and that neither any officer nor employee of the Department of Transportation has or shall have a financial interest in the performance of the Contract or in the supplies, work or business to which it relates, or in any portion of the profits thereof. (See also §139-a and §139-b of the State Finance Law.)

ARTICLE 22. FEDERAL REQUIREMENTS

This Contract is a Federal-aid contract. Please refer to Appendix B for the required federal requirements (including Attachment 1, FHWA Form 1273; Attachment 2, Federal Prevailing Wage Rate; Attachment 3, Goals for Equal Employment Opportunity (EEO) Participation; Attachment 4, Goals for Disadvantaged/Minority/Women’s Business Enterprise (D/M/WBE) Participation; and Attachment 5, Supplemental Title VI Provisions (Civil Rights Act)). See also Article 5 regarding the precedence of the federal requirements to the rest of the Contract Documents.
New York State Department of Transportation

CFR  Code of Federal Regulations
CIM  Civil Integrated Management
CPM  Critical Path Method
CQAE Construction Quality Assurance Engineer
CQCE Construction Quality Control Engineer
CRT  Commuter Rail Transit
CRU  Contract Review Unit
cSEL Cumulative Sound Exposure Level
CSL  Contract Submittal List
CWI  Certification of Welding Inspector
DB  Design-Build
dBA  Decibels, A-scale
DBE Disadvantaged Business Enterprise
DFS  Driver Feedback Sign
DONSI Determination of No Significant Impact
DOT  Department of Transportation
DQAE Design Quality Assurance Engineer
DQCE Design Quality Control Engineer
DRB  Disputes Review Board
DTM  Digital Terrain Model
EBO  Equitable Business Opportunity Solution
EEI  Electrical Engineering Institute
EEO  Equal Employment Opportunity
EIS  Environmental Impact Statement
EMT  Emergency Medical Technician
EPA United States Environmental Protection Agency (also USEPA)
EPC  Environmental Performance Commitment
EPD  Electronic Pricing Document
ESA  Environmental Site Assessment
ESDC  Empire State Development Corporation
FAR  Federal Acquisition Regulations
FCC  Federal Communications Commission
FHWA  Federal Highway Administration
FONSI Finding Of No Significant Impact
FSS  Federal Specifications and Standards, General Services Administration
HDM  Highway Design Manual
HMA  Hot Mix Asphalt
HSSPPD Handling/Storage/Packaging/Preservation/Delivery
IA  Independent Assurance
IAS  International Accounting Standards
IEEE Institute of Electrical and Electronics Engineers
ISO  International Standards Organization
ITP  Instructions to Proposers
ITS  Intelligent Transportation System
LEED  Leadership in Energy and Environmental Design
LLC  Limited Liability Company
LOI  Letter of Interest
LRFD  Load and resistance factor design
MAP  Manual of Administrative Practices
MBE  Minority-Owned Business Enterprise
MM  Materials Method
MP  Materials Procedures
MPO  Metropolitan Planning Organization
City – A subdivision of the State of New York that may be used to designate or identify the location of the proposed Work.

Commissioner – The Commissioner of the New York State Department of Transportation.

Components – Pieces of design and/or actual entities (subsystems, hardware units, software units) of the system/subsystem.

Comptroller – The head of the New York State Office of the State Comptroller.

Construction Inspection (CI) – The act of inspecting all construction operations and enforcing all safety measures (for employees and the traveling public), performed by the Design-Builder to ensure conformance with the contract documents. This includes performing daily inspection and testing activities in accordance with all the requirements set forth in Department policies, manuals, engineering bulletins, and engineering instructions; preparation of applicable MURK forms; preparation of monthly estimates; monitoring compliance to safety procedures, including fall protection and Work Zone Traffic Control (WZTC) requirements; monitoring compliance to environmental requirements. Construction Inspection also includes Contract Administration functions including, but not limited to keeping required records, monitoring the Design-Builder’s progress, monitoring certified payroll compliance and processing of payments, monitoring adherence to Equal Opportunity and Labor requirements contained in the contract, taking measurements as required for payment, and maintaining a contemporaneous project diary documenting conformance with the contract documents.

Construction Inspection Professional Engineering Firm – An Engineering firm, licensed in New York State to perform Engineering Services and having experience in Construction Inspection as defined herein.

Construction Manager – The Design-Builder’s designated representative who leads construction activities of the Design-Build Contract, including overall construction oversight, assignment of the construction workforces, coordination of the construction workforces, etc.

Construction Quality Assurance Engineer (CQAE) – The Department’s representative with primary responsibility for monitoring and/or auditing the Design-Builder’s construction and environmental field activities for compliance with the Contract’s requirements and the Design-Builder’s Quality Control Plan.

Construction Quality Control Engineer – The Design-Builder’s designated representative who Construction QC Engineer is appointed by the Design-Builder to leads the Construction QC activities. The Construction QC Engineer, or his/her designees, shall be delegated the authority to actively monitor the quality of materials and workmanship and to make needed necessary improvements to the quality of Work, including the suspension of the Work if required.

Construction Quality Control Inspectors – Construction Quality Control Inspectors are responsible for performing Construction Inspection of all construction operations and enforcing all safety measures (for employees and the traveling public) performed by the Design-Builder to ensure conformance with the contract documents and the Design-Builder’s Quality Control Plan.

Construction Subcontractor – A Subcontractor (or Affiliate) retained by the Design-Builder that is involved in the actual construction of the Project.

Constructor - A Principal Participant or subcontractor retained by the Design-Builder, who is involved in the actual construction of the Project.

Contract – means the written agreement between the Department and the Design-Builder setting forth the obligations of the parties with respect to the Project, including, but not limited to, the performance of the Work, the furnishing of labor and materials, and the basis of payment.
and including all provisions required by law to be inserted in the Contract whether actually inserted or not. The Contract will include the Contract Documents and any amendments, supplemental agreements, and Change Orders that are required to complete the design and construction of the Work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument. A binding agreement between the Department and a Design-Builder to complete a specified scope of work. The contract includes, but is not limited to an executed contract agreement, a set of contract documents and contract bonds.

**Contract Documents** – The documents identified as such in the Agreement, Article 5 – *Documents Forming the Contract*, including any and all provisions required by law to be inserted in the Contract whether actually inserted or not.

**Contract Price** – The total amount paid for the Work to be performed under the Contract, as it may be adjusted from time to time to account for Orders on Contract.

**Contract Time** – The time specified in the Contract Documents for completion of the Work. This time may be defined as a specified fixed date, a given number of work days, a given number of days, or a combination of the above. The Contract Time may be amended by mutual written agreement to include authorized extensions of time, as the performance of the Contract requires.

**Cost** – All expenditures, including design costs, wholly and necessarily incurred, whether on or off the Site, with respect to the Work and overhead, finance, and other charges properly allocable thereto. Cost does not include any allowance for profit.

**Critical Path** – The sequence of activities yielding the longest path in a CPM schedule. In the context of delays for which a time extension may be allowed, a delay to the Critical Path is deemed to occur only to the extent that the delay adversely impacts the Design-Builder’s ability to complete the Work required to be performed by a Contract Deadline.

**Cultural Resource** – Any prehistoric or historic period artifact, site, building, structure, material remain, or traditional use area resulting from, or associated with, human cultural activity. Historically important cultural resources are those eligible for inclusion on the National Register of Historic Places.

**DBE/Civil Rights Compliance Manager** - the Design-Builder’s designated person who working under the direction of the Project Manager shall be responsible for monitoring all Civil Rights Compliance requirements and achieving the DBE goals and EEO goals described in the Contract documents.

**DB Utility Agreements** – The agreements between the Design-Builder and utility owners as required by the Contract.

**Definitive Design** – The stage of design development where design concepts and parameters are established that will be followed through to completion of the Project.

**Definitive Design Review** – Review of Definitive Design conducted by the Department’s Design Quality Assurance Engineer, with participation by the Department and Stakeholders, as described in DB §111-9.1.

**Demolition Permit** – A written document issued by the Governing Agency authorizing the demolition and removal of buildings, equipment and materials after a determination that the demolition as proposed will comply with applicable provisions of Governmental Rules.

**Department** – The New York State Department of Transportation, including staff and managers who have been delegated certain contractual and technical authority by the Commissioner. The Department maintains a website at [www.dot.ny.gov](http://www.dot.ny.gov).
Department-Caused Delays – Unavoidable delays, to the extent that they affect the schedule’s Critical Path, arising from the following matters and no others:

A) A suspension order pursuant to DB §109-15.2(B);

B) Department-Directed Changes to the base Contract;

C) Failure or inability of the Department to provide the Design-Builder with access to the Site by the applicable date specified on the ROW Acquisition Schedule;

D) Delays in Design Reviews by the Department beyond time periods specified in, or established in accordance with, the Contract Documents;

E) To the extent provided in DB §105-9.2, Department direction to uncover, remove, and restore Work, only if the Department had the opportunity to inspect the Work before it was uncovered, orders the Work uncovered after the fact, and the Work exposed proves acceptable;

F) Failure of the Department to pay undisputed amounts owing to the Design-Builder, to the extent that such nonpayment results in a suspension of Work by the Design-Builder as permitted under the DB §109-15.2, Periodic Payments.

Department-Directed Changes – Any Work not included in the original scope (including changes in the Work due to the Department’s direction to implement modified Standards in performance of the Work) that the Department has directed the Design-Builder to perform in accordance with DB §104-3.1.

Department Utility Agreements – The agreements made between the Department and utility owners.

Departmental Geotechnical Engineer – The Regional Geotechnical Engineer or his/her authorized representative, or a Geotechnical Engineer of the Geotechnical Engineering Bureau acting at the request of the Regional Geotechnical Engineer.

Departmental Engineering Geologist – An engineering geologist of the Geotechnical Engineering Bureau authorized by the Director of Geotechnical Engineering Bureau to perform the duties required under these specifications.

Department’s Project Manager – The designated person, representing the Department and having direct supervision of the administration and execution of the Contract.

Design Acceptance – Written confirmation by the Department after submittal and review of the As-Built Plans that the design conforms to the Contract requirements and reflects the As-Built conditions. This is required as part of Final Acceptance.

Design-Builder – The Team selected pursuant to the RFP which enters into the Contract with the Department to design and construct the Project (also referred to as the “Design-Build Team”).

Design Documents – Maps, Design Plans, Project Specifications, reports, calculations, records, submittals, and other specified documents prepared by the Design-Builder and/or Designer in the course of performing Project engineering and design Work.

Design Manager – The Design-Builder’s designated person who shall have primary responsibility for coordination and oversight of the all the Project Designs including design plans, calculations, and specifications. He/She shall be a registered Professional Engineer in the State of New York. Key Person appointed by the Design-Builder to lead the Design efforts and conduct an assessment and evaluation of design such that the Design Manager can certify to the Design-Builder and to the Department that the design satisfies the Contract requirements.
**Design Plan** – Plans prepared by the Design-Builder showing the location, character, dimensions and other design-related details of the Work to be done.

**Design Quality Assurance Engineer** – The Department's representative with primary responsibility for monitoring and/or auditing the Design-Builder’s design and engineering activities for compliance with the Contract requirements and the Design-Builder’s Quality Control Plan.

**Design Quality Assurance Engineering Firm** – The independent engineering consultant(s) retained by the Department responsible to oversee, manage, certify and perform design QA activities. The Design QA Engineering Firm shall be responsible for management and scheduling of all Design QA activities for all items of Work for this Contract.

**Design Quality Control Engineer** – The person appointed by Design-Builder who reports directly to the Design-Builder’s Quality Manager and is responsible for the QC of all Work conducted by the Designer. The Design QC Engineer shall be a New York-licensed professional engineer with similar experience as the Design Manager. The Design QC Engineer shall ensure that checkers are assigned for each design discipline and for each Design Unit and that they are properly scheduled.

**Design Requirements** – Those specifications contained in the Contract that specify the minimum acceptable technical standards and define the limits within which the design of the Project shall be developed and conducted.

**Design Review** – A comprehensive and systematic examination of the design as specified in the Contract to verify that it is in conformance with the requirements of the Contract, as performed by the Design-Builder for all stages of the design except As-Built Plans, which is performed by the Department. During all stages of the design, except As-Built Plans, the Department will contribute to the review through Oversight including participation, auditing and spot-checking.

**Design Unit** – A distinct portion of the Project of which the design is performed as a contiguous, integrated unit.

**Designer** – A Principal Participant, specialized Subcontractor, or in-house designer that leads the team furnishing or performing the design of the Project.

**Digital Terrain Model (DTM)** – A three-dimensional representation of a terrain’s surface. A DTM is a major constituent of geographical information processing.

**Directive Plans** – Plans contained in Part 6- RFP Plans designated as Directive Plans. Directive Plans depict required elements and components of the Project within specifically defined parameters. The Design-Builder has limited or no latitude to adjust components or details shown on Directive Plans. Examples of Directive Plans may include the following:

A) Standard Plans;

B) Right–of-way plans; and

C) Any other plans included in the RFP that depict the Basic Project Configuration, but only to the extent that such plans depict the Basic Project Configuration.

**Disadvantaged Business Enterprise** – A for-profit, small business concern as defined pursuant to Section 3 of the federal Small Business Act (Public Law 85-536, as amended) and Small Business Administration regulations implementing it (13 CFR Part 121) that is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals and whose management and daily business operations are controlled...
by one or more of the socially and economically disadvantaged individuals who own it, which meets the definitions set forth in 49 Code of Federal Regulations (CFR) 26.

**Dispute** – A matter of Contract performance or Contract compensation, including granting of extensions of time, in which there is or may be disagreement between the Design-Builder and the Department and which may involve adjustment of Contract Items or the addition of new items to the Contract, extension of time for performance, and/or adjustments in compensation necessitated by the resolution of such disagreement.

**Electronic Pricing Documents** – Pricing data assembled by the Design-Builder, as described in ITP Section 4.7 and DB §110. The Electronic Pricing Documents may be used for negotiation of Orders on Contract and resolution of Disputes and claims and other purposes set forth in the Contract.

**Engineer-in-Charge (EIC)** - When used in the NYSDOT standard specifications, the Department’s Project Manager or designated representative. When used in the Archaeological Work Plan (AWP), the Construction Protection Plan (CPP), and the Stormwater Pollution Prevention Plan (SWPPP) Engineer-in-Charge (EIC) means the Design Builder’s Resident Engineer.

**Environmental Approvals** – Those Governmental Approvals arising from or required by any Environmental Law in connection with development of the Project, including the DEIS, the FEIS, the Record of Decision (ROD) and SEQRA findings.

**Environmental Compliance Manager** - The Design-Builder’s designated person who working under the direction of the Project Manager shall have primary responsibility for ensuring that all of the Project’s Environmental requirements are satisfied.

**Environmental Documentation** – Documents supporting the Environmental Approvals.

**Environmental Laws** – All Governmental Rules now or hereafter in effect regulating, relating to, or imposing liability or standards of conduct concerning the environment or to emissions, discharges, releases, or threatened releases of hazardous, toxic, or dangerous waste, pollutant, contaminant, substance, or material into the environment including into the air, surface water, or ground water or onto land, or relating to the manufacture, processing, distribution, use, re-use, treatment, storage, disposal, transport, or handling of hazardous, toxic, or dangerous waste, pollutant, contaminant, substance, or material, or otherwise relating to the protection of public health, public welfare, public safety or the environment (including protection of nonhuman forms of life, land, surface water, groundwater, and air).

**Environmental Performance Commitments** – Any commitments, obligations or liabilities as defined in the Contract Documents.

**Environmental Requirements** – The requirements listed in Part 3, Section 3 – Environmental Compliance.

**Environmental Resource** – The physical and biological components, including paleontological components, of the human and natural environment.

**Equitable Business Opportunity Solution (EBO)** – An internet-based management control system that provides government agencies with the tools to develop, implement and monitor a Disadvantaged Business Enterprise program in accordance with 49 CFR Part 26, including all the tools necessary to set Department and contract goals, monitor non-discriminatory procurement and award processes, develop and execute availability, utilization and disparity studies, set and monitor labor goals and provide statistical evidence to remedy discrimination as identified, and to monitor and report on participating contracts. For purposes of the Contract,
Version 1.4 of EBO shall apply, except that the Department, with notice to the Design-Builder, may choose to use a different version of EBO at its discretion.

**Erosion and Sediment Control** – Any action taken or item used as part of the Project, or as a separate action, to minimize the destructive effects of wind and water on surface soil.

**Extra Work** - Work not provided for in the Contract as awarded but found essential to the satisfactory completion of the Contract within its intended scope.

**Federal-Aid** – Joint cooperative construction or reconstruction of State highways and bridges or grade crossing elimination work or other work performed with monies contributed to the State by the federal government under Title 23 of the United States Code, Highways, and amendments thereto.

**Federal-Aid Project** – An identification applied to federally aided work for the purpose of the records of the FHWA.

**Final Acceptance** – The acceptance of the completed Work, given by the Department in accordance with DB §109-11.4.

**Final Acceptance Deadline** – The date set forth in the Agreement, Article 2 – Contract Time, by which Design-Builder is required to achieve Final Acceptance.

**Final Design** – The stage of design development, after Interim Design, at which time the Design Plans and Project Specifications for a Design Unit are 100% complete.

**Final Inspection** – The inspection scheduled after receipt of notification from the Design-Builder that it has completed all Work items, including punch list items and demolition Work, so that a certificate of Project Completion may be issued.

**Final Supplemental Agreement** – Agreement between the Department and the Design-Builder, stating the total cost of the Work done by the Design-Builder. This document, which may also be referred to as a "Final Agreement," provides a final tabulation of the net increases or decreases in the Contract Price.

**Force Account** – The Basis of Payment for the directed performance of design and/or construction Work, with payment based on the actual cost of labor, equipment, and materials, and including various constant activities.

**Foundations Lead Designer** - The Design-Builder's designated person who working under the direction of the Design manager shall have primary responsibility for the design of all Foundation elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

**Force Account Work** – Work performed as a result of additions or changes to the Contract, with payment based on the actual cost of labor, equipment, and materials, as specified in DB §§109-7 and 109-9.

**Generally Accepted Accounting Principles (U.S.) (US GAAP)** – Generally accepted accounting principles in effect in the United States, including the pronouncements and guidance published in the Federal Accounting Standards Advisory Board Handbook of Accounting Standards and Other Pronouncements, as amended from time to time.

**Geotechnical Engineering Bureau** – The Department employee or other designated inspection agency or representative of the Department, having responsibility for providing Geotechnical Engineering Services, including laboratory testing of earthwork materials.

**Geotechnical Instrumentation Engineer** - The Design-Builder's designated person who working under the direction of the Design Manager shall have the primary responsibility for the
design, implementation and monitoring of all geotechnical instrumentation for the Project. Such individual shall be a registered Professional Engineer in the State of New York.

Good Faith Efforts (GFE) – The efforts to achieve a DBE goal or other DBE requirement which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement. Good Faith Efforts shall meet the requirements of 49 Code of Federal Regulations (CFR) 26.53.

Governing Agency – Any Governmental Person having jurisdiction over an aspect of the Work or the Project.

Governmental Approval – Any approval, authorization, certification, consent, decision, exemption, filing, lease, license, permit, registration, concession, grant, franchise, waiver, variance or other approval, guidance, protocol, mitigation agreement, or memoranda of agreement/understanding, or ruling and any amendment or modification of any of them provided or required by or with any Governmental Person in order to design and construct the Project.

Governmental Person – Any federal, state, local, or foreign government; any political subdivision; or any governmental, quasi-governmental, judicial, public, or statutory instrumentality, administrative agency, authority, body, or entity other than the Department.

Governmental Rule – Any statute, law, code, regulation, ordinance, rule, judgment, order, decree, agreement, directive, guideline, policy requirement, other governmental restriction, or any similar form of decision of, determination by, interpretation of, or administration of any of the foregoing by any Governmental Person, which is applicable to the Work or the Project, whether now or hereafter in effect. “Governmental Rule,” however, excludes Governmental Approvals.

Guarantor – A parent company or other affiliate of a Principal Participant that is providing performance security for the Contract through a guaranty in the form prescribed in the RFP.

Guaranty – An instrument executed by a Guarantor in the form prescribed in the RFP, guaranteeing the Design-Builder’s obligations under the Contract Documents.

Hazardous Materials – Any (a) substance, product, waste, pollutant, contaminant or other material of any nature whatsoever that exceeds maximum allowable concentrations for elemental metals, organic compounds or inorganic compounds, as defined by any Environmental Law; (b) substance, product, waste, pollutant, contaminant or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to any Environmental Law; (c) substance, product, waste, pollutant, contaminant or other material of any nature whatsoever which may give rise to liability under clause (a) or (b) or under any statutory or common law theory based on negligence, trespass, intentional tort, nuisance, or strict liability or under any reported decisions of a state or federal court; (d) petroleum hydrocarbons excluding de minimis amounts and excluding petroleum hydrocarbon products contained within regularly operated motor vehicles; and (e) hazardous building materials including asbestos or asbestos-containing materials, lead or PCBs in structures and/or other improvements on or in the Site or in subsurface artifacts (other than mineral asbestos naturally occurring in the ground). The term “Hazardous Materials” includes Hazardous Waste and contaminated materials.


Highway Advisory Radio – A radio system used to notify and broadcast advisory messages to the motoring public over 530 AM radio band.

Incremental Costs – Those costs, if any, which the Design-Builder incurs as a result of a particular circumstance which the Design-Builder would not have incurred but for the circumstance. In determining such costs, one would determine the total cost which the Design-
Builder would have incurred had the circumstance not occurred, and subtract such amount from the costs actually incurred. The difference is the “increment.” For example, if the Design-Builder originally had to relocate three water lines, and a fourth water line is discovered in the same area which can be relocated by the same crew, subject to the provision of the Contract, the Incremental Costs would be the costs of keeping the crew working the additional time to relocate the fourth water line, and would not include any portion of the expense of moving the crew to the Site in the first place.

**Independent Assurance** – The activities that are undertaken in accordance with 23 CFR 637.203(a)(2), providing an unbiased and independent evaluation of all the sampling and testing procedures, equipment calibration, and qualifications of personnel (Design-Builder’s or Department’s) used in the Acceptance Program, including the Design-Builder's QC. The Independent Assurance (IA) agent for the Project will be designated by the Department. The Department’s activities that are intended as an unbiased and independent evaluation of all sampling and testing procedures used in acceptance programs as provided in 23 CFR Part 637. The independent assurance program assures the sampling and testing equipment used in the acceptance program is operating correctly and remains calibrated. It involves a separate and distinct schedule of sampling, testing and observation.

**Indicative Plans** – Those Plans that are provided as reference information indicating the nature and type of Work to be designed and constructed as part of the Project and reflecting items for which the Department has no particular view on the specific configuration or material used in the final product. Indicative Plans do not necessarily reflect the final locations, quantities, or all elements required to complete the design.

**Initial Baseline Progress Schedule** – The Baseline Progress Schedule submitted with the Proposal.

**Inspection** – The act of viewing or looking carefully at construction, manufacturing, design, safety, and maintenance practices, processes, and products, including document control and Working Plan review, to ensure the practices, processes, and products comply with the requirements contained in the Contract and activities specified in the Contract, Design Plans, and/or Project Specifications.

**Inspector** – A common term used to describe a representative of the Design-Builder or Department detailed to inspect methods of construction or fabrication and/or materials, equipment for Work both on and off the Site of the Project.

**Instructions to Proposers** – Those documents containing directions for the preparation and submittal of information by the Proposers in response to the RFP, as amended by any addenda thereto.

**Interim Design** – The stage of design development after Definitive Design where the Design Plans and Project Specifications for a Design Unit are at the 60% to 80% stage of completion.

**International Accounting Standards (IAS)** – International accounting standards in effect and issued by the International Accounting Standards Board, as amended from time to time.

**Landscape Development** – Any development or item used as part of the Project or as a separate action through the use, placement, and management of land and elements for aesthetic enhancement, such as decorative surfaces and wall faces, benches, waste receptacles, tables, etc., and plant materials consistent with a specific, approved landscape architectural Design Plan.
**Landscaping** – The use and placement of plant materials (trees, shrubs, vines, and certain ground covers) consistent with an approved landscape architectural Design Plan. Planting vegetation for screening and erosion control purposes does not constitute landscaping.

**Land Surveyor** – A Land Surveyor licensed or otherwise authorized to practice surveying under Article 145 and registered or otherwise authorized under Article 130 of the New York State Education Law.

**Lead Architectural Designer** - The Design-Builder’s designated person working under the direction of the Design Manager who shall have the primary responsibility for the design of all Architectural elements of the Project. Such individual shall be a registered Professional Architect in the State of New York.

**Lead Civil Engineer** - The Design-Builder’s designated person who working under the direction of the Design Manager shall have primary responsibility for the design of all Highway and Traffic elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

**Lead Demolition Engineer** - The Design-Builder’s designated person who working under the direction of the Design Manager shall have the primary responsibility for the design, coordination and execution of the demolition of the existing bridge structures of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

**Lead ITS Engineer** - The Design-Builder’s designated person who working under the direction of the Design Manager shall have primary responsibility for the design of all Intelligent Transportation System elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York.

**Lead Public Involvement Person** - The Design-Builder’s designated person who working under the direction of the Project Manager shall have primary responsibility for supporting the Department’s implementation of the Kosciuszko Project Public Involvement Plan and supporting the Department in community relations, public information, and community outreach.

**Lead Principal Participant** - The Principal Participant that is designated by the Proposer as having the lead responsibility for managing the Proposer’s organization.


**Lien** – Any pledge, security interest, mortgage, deed of trust or other charge or encumbrance of any kind, or any other type of preferential arrangement (including any agreement to give any of the foregoing, any conditional sale or other title retention agreement, any lease in the nature of a security instrument, and the filing of or agreement to file any financing statement or other instrument intended to perfect a security interest).


**Listed Material Source** – A local source of material that may be listed and described in the Plans and in the Contract for possible use on the Project.

**Management Plan** – The Management Plan developed by Design-Builder as defined in Part 3, Section 2 – Project Management.

**Manufacturer** - A Manufacturer is an entity that operates or maintains a factory or establishment that produces on its premises the Material, Equipment, or supplies obtained by the Design-Builder for incorporation into the Project.
**Material** - Any approved material acceptable to the Commissioner and conforming to the requirements of the Specifications.

**Materials Bureau** – The Department employee or its designated inspection agency or representative, with responsibility for providing materials engineering services including laboratory testing.

**Materials Testing Firm or Laboratory** – An independent testing firm or Laboratory, having experience in performing Quality Control activities.

**Minority-Owned Business Enterprise** – A business enterprise, including a sole proprietorship, partnership, or corporation that is a small business at least 51% owned by one or more minority group members and meets the definition set forth in Article 15-A of the New York State Executive Law.

**Necessary Basic Project Configuration Change** – Material changes in the Basic Project Configuration that are necessary to correct an error, omission, or defect in the Basic Project Configuration (with the understanding that a change shall be deemed “necessary” only if the error, omission, or defect creates a conflict with other Contract requirements or another problem which cannot reasonably be corrected without a material change in the Basic Project Configuration).

**Ninety Day Schedule** – The schedule submitted by the Design-Builder pursuant to DB §108-1.2.2A.

**Non-Conformance Report** – The written documentation of deficiencies, instances of non-compliance, errors, and/or omissions in the Work, per DB §105-16. The Non-Conformance Report is a means and method to document findings brought forth by either the Design-Builder or the Department at any point during the Project design or construction to identify non-conforming items that shall be documented and managed until Final Acceptance.

**Notice to Proceed** – Written notice to the Design-Builder to proceed with some or all of the Work as specified in the Contract including, when applicable, the start date of the Contract Time.

**Order on Contract** – A written order issued by the Department in accordance with DB §104-3 or DB §109-9.

**Oversight** – Actions by the Department to satisfy itself that the Design-Builder is designing, constructing and managing the Work in accordance with the Contract Documents. It includes actions identified in the Contract Documents by the terms QA, Independent Assurance, Verification Sampling and Testing, compliant/compliance, accept/acceptance, inspect/inspection, audit, ensure, certify, confirm, review, verify or terms of similar import. Department’s comments as a result of Oversight are conveyed to the Design-Builder through consultation and written comment. Neither the activity of Oversight nor the lack of consultation and written comment on the part of the Department shall be construed to relieve the Design-Builder and its organization from the responsibility and costs for meeting all Contract and regulatory requirements.

**Part** – Unless otherwise required by the context, a major subdivision of the Contract Documents.

**Partial Suspension** – Suspension of Work on some, but not all, items.

**Payment Bond (Labor and Materials Bond)** – The bond, in the form set forth in the RFP or as otherwise approved by the Department, executed by the Design-Builder and its Surety, in the...
stated maximum amount required by the Contract, guaranteeing the payment of all monies due to persons furnishing labor or materials to the Design-Builder or its Subcontractors in the prosecution of the Work, up to such stated maximum amount.

**Performance Bond (Faithful Performance Bond)** – The bond, in the form set forth in the RFP or as otherwise approved by the Department, executed by the Design-Builder and its Surety or Sureties, in the stated maximum amount required by the Contract, guaranteeing performance of all Work in compliance with the requirements of the Contract Documents, including all Orders on Contract, Amendments, and Supplemental Agreements pertaining thereto.

**Person** – Any individual, firm, corporation, company, sole proprietorship, limited liability company (LLC), joint venture, voluntary association, partnership, trust, or unincorporated organization, or other legal entity or combination thereof.

**Prestressed Concrete Construction Manual** – The New York State Prestressed Concrete Construction Manual published by the Office of Structures Design and Construction, which is current on the date of advertisement for bids. The Prestressed Concrete Construction Manual is a mandatory supplement to the contract documents for contracts which include Prestressed Concrete Units (Structural).

**Principal Participant** – Any of the following entities:

A) The Design-Builder;

B) If the Design-Builder is a partnership, joint venture, or limited liability company, each general partner or member of the Design-Builder; and/or

C) Each Person holding (directly or indirectly) an equity interest in the Design-Builder.

**Professional Architect** – A professional architect licensed or otherwise authorized to practice architecture under Article 147 and registered or otherwise authorized under Article 130 or the New York State Education Law.

**Professional Engineer** – A professional engineer licensed or otherwise authorized to practice engineering under Article 145 and registered or otherwise authorized under Article 130 of the New York State Education Law.

**Professional Landscape Architect** – A professional landscape architect licensed or otherwise authorized to practice engineering under Article 148 and registered or otherwise authorized under Article 130 of the New York State Education Law.

**Project** – The improvements to be designed and constructed by the Design-Builder and all other Work product to be provided by the Design-Builder in accordance with the Contract Documents.

**Project Completion** – Completion of all Work on the Project and Final Inspection thereof, including: (i) completion of all construction and demolition punch list Work, (ii) acceptance of the Work by third parties as required, and (iii) completion of final clean-up of the Site as required by the Contract Documents.

**Project Completion Date** – The date specified in the Agreement, Article 2 – Contract Time, by which Design-Builder is required to achieve Project Completion.

**Project Labor Agreement** – The collective bargaining agreement with one or more labor organizations that establishes the terms and conditions of employment for the Project.

**Project Manager** – The Design-Builder’s designated representative responsible for all aspects of the Work, including construction oversight, design oversight, project finances, project scheduling, etc. Disputes regarding design or construction that cannot be resolved with the
designer or in the field will be brought to the attention of the Design-Builder’s Project Manager for resolution.

**Project Requirements** – All of the terms and conditions set forth in *Part 3 – Project Requirements*.

**Project Specifications** – Those specifications developed by the Design-Builder to define and control the specific requirements, conditions, means, and methods to be used on the Project. Project Specifications will be based on the Contract requirements, including the Standard Specifications, and shall provide finished products that meet or exceed the quality requirements of the Contract. Project Specifications are subject to review, consultation and written comment of the Department’s Project Manager during Design Reviews, and to a determination by the Department, in their sole discretion, whether the Project Specifications meet the Contract requirements.

**Project Superintendent** - The Design-Builder’s on-site designated representative who oversees the construction of the Design-Build Contract, including directing and coordinating the activities of the Design-Builder’s workforce and all subcontractors, ensuring that the work progresses according to schedule, and ensuring that material and equipment are delivered to the site on time, etc.

**Proposal** – The Proposal submitted by the Design-Builder in response to the RFP, including any revisions thereto. If the Department requested a revised Proposal, the term “Proposal” means the revised Proposal submitted by the Design-Builder, including any revisions thereto.

**Proposal Date** or **Proposal Due Date** – The date of submittal of the Proposal, as specified in the Agreement.

**Proposal Price** – The Contract Price stated in the *Agreement, Article 1 – Compensation*, as of the date of execution thereof.

**Protect in Place** – Any activity undertaken to avoid damaging a utility which does not involve removing or relocating that utility, including staking the location of a utility, avoidance of a utility’s location by construction equipment, installing steel plating or concrete slabs, encasement in concrete, temporarily de-energizing power lines, and installing physical barriers. For example, temporarily lifting power lines without cutting them would be considered a method in which to Protect in Place, whereas temporarily moving power lines to another location after cutting them would be considered a Temporary Relocation. The term includes both temporary measures and permanent installations meeting the foregoing definition.

**Quality Assurance Inspection** – Quality Assurance Inspections performed by the Department in accordance with DB §§112 and 113.

**Quality Assurance Sampling and Testing** – Sampling and testing performed by the Department or firm retained by the Department independently of the Design-Builder production or QC Inspectors.

**Quality Control Inspection** – Quality Control inspections are performed by the Design-Builder’s personnel who are responsible for assessing and adjusting design, production and construction processes so as to control the level of quality being produced in the Project. The purpose of QC Inspections is to measure those quality characteristics and to inspect those activities that affect the production at a time when corrective action can be taken to substantially decrease the likelihood that appreciable non-conforming material will be incorporated in the Project.

**Quality Control Sampling and Testing** – Sampling and testing performed by the Design-Builder.
Quality – The degree to which a product or service conforms to a given requirement.

Quality Assurance – The Department’s process of forming an acceptance decision to insure the Design-Builder’s design, the incorporated materials on this project and the workmanship is meeting contract intent. The QA process includes all the planned and systematic Oversight actions that provide confidence that the Design-Builder is performing QC in accordance with the Quality Control Plan, that all Work complies with the Contract and that all Materials incorporated in the Work, all Equipment, and all elements of the Work will perform satisfactorily for the purpose intended. Quality Assurance includes, but is not limited to, monitoring and verification of design through auditing, spot-checking and participation in the review of the design, and monitoring and verification of construction, manufacturing/process facilities and equipment, on site equipment and QC documentation through auditing, spot inspections and Verification Sampling and testing at production sites and the Project Site. Quality Assurance also includes Independent Assurance, consultation and provision of written comments by the Department, documentation of QA activities, final inspection and Final Acceptance. All planned and systematic actions by the Department or QA Engineering Firm necessary to confirm QC is performed in accordance with the Quality Control Plan, that all Work complies with the Contract and that all materials incorporated in the Work, all equipment, and all elements of the Work will perform satisfactorily for the purpose intended.

Quality Assurance Laboratory – Any testing laboratory retained by the Department to perform laboratory QA testing that complies with the requirements for Department certification for applicable tests.

Quality Characteristic – The characteristic of a unit or product that is actually measured to determine conformance with a given requirement. Example: measuring percent air content in concrete is a Quality Characteristic.

Quality Check Points (Hold Points) – Quality Check Points (QCP) established at various stages of construction for the Project that provide an opportunity to evaluate work for acceptability before beginning the next portion of the work.

Quality Control – The total of all activities performed by the Design-Builder, Designer, Construction Inspection Professional Engineering Firm and the Materials Testing Firm or Laboratory, Subcontractors, producers or manufacturers to ensure that the Work performed by the Design-Builder conforms to the Contract requirements. For design, this shall includes, but is not limited to, procedures for design quality, checking, design review including reviews for constructability, and review and approval of Working Plans. For construction Quality Control activities shall include, but not be limited to this includes procedures for materials handling and construction quality, inspection, sampling and testing of materials both on site and at the plant(s), production and construction; field testing of materials, obtaining and verifying material certifications, record keeping and equipment monitoring and calibration; calibration and maintenance of equipment; production process control; and monitoring of environmental compliance. Quality Control also includes documentation of all QC design and construction efforts.

Quality Control Plan – The Design-Builder’s plan for implementing the Design-Builder’s overall Quality System and associated activities, including Design-Builder’s QC and procedures to assure and document quality of design and construction activities through reviews, inspections, testing, internal communications, and necessary interfaces with the Department and the Department’s QA activities.

Quality Manager – The individual employed by the Design-Builder who is responsible for the overall Quality Control Plan and Quality Assurance activities of the Design-Builder, including the quality of management, design, and construction. (also referred to as the “Quality Control Manager”)
**Quality Program** – The overall quality system and associated activities, including the Department’s QA and IA program, Design-Builder QC activities and associated Quality Control Plan that will assure materials and workmanship incorporated into the Project are in conformity with the Contract requirements, Design Documents and Project Specifications.

**Release for Construction** – The stage of design development after Final Design where the Design Plans and Project Specifications for a Design Unit or a component thereof are 100% complete and satisfy the requirements of DB §111-11.6.

**Reasonably Close Conformity** – Compliance with reasonable and customary manufacturing and construction tolerances where working tolerances are not specified. Where working tolerances are specified, Reasonably Close Conformity means compliance with such working tolerances. Without detracting from the complete and absolute discretion of the Department’s Project Manager to insist upon such tolerances as establishing Reasonably Close Conformity, the Department’s Project Manager may accept variations beyond such tolerances as Reasonably Close Conformity where they will not materially affect the value or utility of the Work and the interests of the State.

**Reference** – Any publication or other document, or provision(s) contained therein, to the extent that it is specifically identified as a “Reference” in the Contract Documents. The Design-Builder is not required to use References in design and construction of the Project, but may use the References as it deems appropriate.

**Reference Documents** – The documents provided with and so designated in the RFP. The Reference Documents, including plans contained therein and/or so designated, are not Contract Documents and were provided to Design-Builder for informational purposes only and are relied upon at the Design-Builder’s own risk.

**Region** – One of eleven geographical subdivisions of the State used to designate or identify the location of the proposed Work.

**Regional Director** – The director, acting for the Commissioner, who is delegated the authority and responsibility to execute the total Department prescribed Work Plans for his/her respective Region.

**Regulatory Agencies** – Those Governmental Persons involved in permits, approvals, 106 process, consultation or otherwise having jurisdiction over or involvement with any aspect of the Project.

**Relocation** – Each removal, relocation, abandonment, and/or protection in place (including provision of temporary services as necessary) of any and all utilities that is necessary in order to complete the Work as required by the Contract.

**Request for Proposals** – The written solicitation issued by the Department (and as amended by any Addenda) seeking Proposals (including quality and price) to be used to identify the Proposer offering the best value to the Department, for the purpose of selecting the Design-Builder for the Project. The RFP will be issued only to Persons who are on the Short-List. The Request for proposal shall consist of the Instructions to Proposers, the Contract Documents, and the Reference Documents.

**Request for Qualifications** – The written solicitation, including all Addenda thereto, issued by the Department seeking SOQs to be used to identify the shortlisted Proposers that received the RFP for the Project.

**Resident Engineer** – A Professional Engineer licensed in the State of New York, who directs the organization and coordination of the inspectors and the on-site Construction Quality Control inspection of the execution of the construction by the Design-Builder. He ensures that the
construction is executed in accordance with the approved designs, drawings and specifications related to the work under construction.

**Responsible Architect** – The New York-registered architect designated by the Designer for each Design-Builder-designated Design Unit who is responsible for signing and sealing design reports, Design Plans, Working Plans and Project Specifications for the assigned Design Unit(s).

**Responsible Engineer** – The New York-licensed engineer, designated by the Designer for each Design-Builder-designated Design Unit who is responsible for signing and sealing design reports, Design Plans, Working Plans and Project Specifications for the assigned Design Unit(s).

**RFP Date** – The date the RFP was issued, as specified in the Agreement.

**RFP Plans** – Those plans included in Part 6 – RFP Plans which are, generally-speaking, incomplete plans representing the Project and its components. RFP Plans may be Administrative Plans, Directive Plans or Indicative Plans.

**Risk Manager** - The individual employed by the Design-Builder who is responsible for the Design-Builder’s overall Risk Management program for the Project, including identifying and managing the risks identified in the management, design and construction of the Project.

**ROW Acquisition Schedule** – The schedule for acquisition of rights of way (including fee acquisitions and easements) and other real property interests by the Department set forth in Part 3, Section 7 – Right-of-Way, as the initial Acquisition Clearance and Status Report.

**ROW Limits** – The area within the Project Limits that is between the highway boundaries, held in trust by Department for the People of the State of New York in either fee or easement.

**Safety Manager** - The Design-Builder’s designated person who working under the direction of the Project Manager shall have the primary responsibility for implementing and tracking safety measures for the Project and for ensuring that the Project is progressed safely and in accordance with the Design-Builder's Safety Plan, the Contract requirements and the Safety Requirements of the Project. See also, Part 2, DB § 107-7.10.

**Safety Plan** – The plan that sets out the Design-Builder’s means of complying with its obligations in relation to Project safety, which plan shall be provided and maintained in accordance with DB §107-7.5.

**Scope of the Project** – The brief description of the Work to be performed to design and construct the Project as contained in the Contract Documents.

**Secretary** – The Secretary of State of New York.

**Section** – Unless otherwise required by the context, a subdivision of the Project or a subdivision of a Part of the Contract Documents.

**Seismic Specialist** - The Design-Builder’s designated person who working under the direction of the Design Manager shall have the primary responsibility for the seismic analysis and design of the structural elements of the Project. Such individual shall be a registered Professional Engineer in the State of New York

**Site** – Those areas designated in writing by the Department for performance of Work and such additional areas as may, from time to time, be designated in writing by the Department for the Design-Builder’s use in performance of the Work. The Site initially includes the area within the ROW Limits. For purposes of insurance (subject to any notification and other requirements imposed by the insurer(s) for approval), indemnification, safety and security requirements, and
payment for use of equipment, the term “Site” also includes (a) the field office sites, (b) any property used for bonded storage of material for the Project approved by the Department, (c) staging areas dedicated to the Project, and (d) areas where activities incidental to the Project are being performed by Design-Builder or Subcontractors, but excluding any permanent locations of Design-Builder or such Subcontractors.

**Site Security Plan** – The plan that sets out the Design-Builder’s means of complying with its obligations in relation to Site security, which plan shall be provided to the Department and maintained in accordance with the Contract.

**Special Provisions** – Additions and revisions to the edition of the *Standard Specifications Construction and Materials*, published by the New York State Department of Transportation, current on the Contract execution date.

**Specialty Subcontractor** - Those consultants or subcontractors identified to perform Work critical to the success of the Project such as design, Construction Inspection, materials testing, demolition, environmental compliance, landscaping, or other specialty work.

**Stakeholder** – Any Person designated by the Department as such, including:

A) The State, primarily represented by the Department, including its subsidiary agencies and departments;

B) The FHWA;

C) Other states and/or multi-state authorities directly affected by or cooperating with the development of the Project;

D) Federal and State regulatory and permitting agencies having jurisdiction over portions of the Work;

E) Counties, cities, towns, and villages within the State directly affected by the Project;

F) Other public or private entities impacted or potentially impacted by the Project, such as authorities, utility owners, transit systems, and railroads; and

G) Other entities specifically identified by the Department.

**Standards** – Any publications or other documents, or provision(s) contained therein, to the extent that they are specifically identified as “Standards” in the Contract Documents. The term includes standards developed and published by the Department, and recognized associations, societies, institutes and other entities for design and construction. Standards established by reference in the Contract Documents constitute a further elaboration of the Project requirements.

**Standard Plans** – Detailed Plans that depict the dimensional requirements and clearances of certain features of the Project and components, subassemblies, or systems to be incorporated into the Project, issued by the Department or other Stakeholder, for general application and repetitive use in connection with the Project.


**State** – The State of New York.

**Steel Construction Manual** – The New York State Steel Construction Manual published by the Office of Structures Design and Construction, which is current on the date of advertisement for
bids. The Steel Construction Manual is a mandatory supplement to the contract documents for contracts which require the Design-Builder to furnish or rehabilitate structural metals.

**Structural Tests and Special Inspections** – All tests and inspections associated with materials, installation, fabrication, erection, or placement of components and connections requiring expertise to ensure compliance with approved construction documents and referenced standards, associated with Chapter 17 of the NY State Building Code. All tests and inspections are to be coordinated with the designated Code Compliance Specialist (Coordinator)/Code Compliance Manager.

**Subcontract** – Any agreement entered into by the Design-Builder or a Subcontractor (at any tier unless otherwise specified) for a portion of the construction or any other part of the Work in connection with, and under the terms of, the Contract.

**Subcontractor** – Any Person with whom the Design-Builder has entered into any Subcontract and any other Person with whom any Subcontractor has further subcontracted any part of the Work, at any tier. Suppliers and materialmen are excluded from the term. The term does not include any employee with an employment contract, or any employee organization with a collective bargaining agreement, who with the written consent of the Department, sublets any part of the Contract.

**Substantial Completion** – The point at which the Project, or Section thereof, is complete, such that all items or Work, as described in Contract Document, Part 3 – Project Requirements, have been completed in accordance with the Contract Requirements and Approved by the Department’s Project Manager.

**Substantial Completion Date** – The Date on which the Design-Builder is required to achieve Substantial Completion, per the Contract Documents.

**Surety** – The corporate body or bodies properly licensed in the State which has or have issued the Performance and/or Payment Bond.

**Suspension and Debarment** – The disqualification of a Person from proposing on public works projects for a period of time determined in accordance with United States Department of Transportation (USDOT) regulations.

**Temporary Relocation** – Any interim Relocation of a utility (i.e., the installation, removal, and disposal of the interim facility) pending installation of the permanent facility in the same or a new location, and any removal and reinstallation of a utility in the same place with or without an interim Relocation.

**Termini** – A general term used to describe the limits of the Project, and including the beginning and end of the Project, the ROW Limits, pit sites, haul roads, and temporary and permanent construction or maintenance easements.

**Test** - The methods adopted by the Department and the Design-Builder to ascertain the quality, character, and acceptability of Materials and processes utilized in performing the Contract.

**Thruway** – The network of toll roads and bridges operated by the New York State Thruway Authority.

**Time Related Dispute** – Any Dispute arising from any event not within the Design-Builder's control, performance, action, force, or factor which materially and adversely affects the scheduled time of performance depicted in the Design-Builder's most recent Baseline Progress Schedule submitted to the Department.
Transportation Operations Coordinating Committee – A coalition of 16 transportation and public safety agencies in the New York/New Jersey/Connecticut metropolitan region created in 1986 to provide a cooperative, coordinated approach to regional transportation management.

**Unit Price** – The price per unit of measure specified for items of Work in accordance with any unit priced Orders on Contract.

**Utility** - A Person, corporation, municipality, or public authority engaged in the distribution of electricity, gases, petroleum products, water, steam, the collection of wastewater, the operation of traffic control systems, or the provision of telecommunication services.

**Utility Agreement** – The Department Utility Agreements and DB Utility Agreements.

**Utility Delay** – The meaning set forth in DB §104-4.2.3.

**Utility Information** – The utility-related data set forth in the Contract.

**Utility Owner** - The owner or operator of any Utility (including Persons and Governmental Persons).

**Utility Relocation Plans** – The Design Plans for Relocation of a utility impacted by the Project, to be prepared by the Design-Builder or the utility owner.

**Utility Standards** – The standard specifications, standards of practice, and construction methods that are applicable to a Relocation pursuant to the terms and conditions of a Utility Agreement; provided that if a particular facility is not governed by a Utility Agreement or the applicable Utility Agreement does not specify applicable standards, the term “Utility Standards” shall mean the standard specifications, standards of practice, and construction methods that are customarily applied by a utility owner to its facilities, in effect as of the Proposal Date.

**Value Engineering Change Proposal** – A proposal developed and documented by the Design-Builder which (A) produces a net savings to the Department without impairing essential functions or characteristics of the Project (including the meeting of requirements contained in all Governmental Approvals); and (B) would modify or require a change in any of the requirements of or constraints set forth in the Contract Documents in order to be implemented. A Value Engineering Change Proposal cannot be based solely upon a change in quantities.

**Verification Sampling and Testing** – Sampling and testing performed by the Department, or by a firm retained by the Department, to validate the Design-Builder’s QC sampling and test data that was used in the acceptance decision.

**Warranties** – The written commitments of the Design-Builder as set forth in the Contract regarding quality and performance over a specified period of time after Final Acceptance of the Project Completion.

**Women-Owned Business Enterprise** – Women-Owned Business Enterprise means a business enterprise, including a sole proprietorship, partnership, or corporation that is a small business at least 51% owned by one or more US citizens or permanent resident aliens who are women and meets the definition set forth in Article 15-A of the New York State Executive Law.

**Work** – All of the administrative, design, engineering, real property acquisition support services, utility support services, procurement, legal, professional, manufacturing, supply, installation, construction, supervision, management, testing, verification, labor, material, equipment, maintenance, warranty, documentation, and other duties and services to be furnished and provided by the Design-Builder as required by the Contract Documents, including all efforts necessary or appropriate to achieve Final Acceptance of the Project and to fulfill the Design-
Builder’s warranties except for those efforts which the Contract Documents specify will be performed by the Department or other Persons. In certain cases, the term is also used to mean the products of the Work.

**Work Product** – All data, information, documentation and other materials prepared by or on behalf of the Design-Builder and in any way related to the Project including designs, drawings, reports, schedules, studies, plans, specifications, deliverables and supporting documentation the Design-Builder may be required to submit pursuant to the Contract, engineering documents, calculations and computations, geotechnical soils and soil boring data, analyses, reports and records, property files, agreements and documents, all documents comprising or underlying the Design-Builder’s development of the Design Documents, engineers’ and inspectors’ diaries and reports, utility relocation plans and agreements, right-of-way record maps and surveys, and other data, analyses, studies and reports, correspondence and memoranda relevant to design or construction decisions, correspondence and memoranda relevant to operation and maintenance decisions, contracting plans, air quality monitoring data, environmental reviews, studies and reports, mitigation studies and reports, data, assessments, studies and reports regarding Hazardous Materials investigations, testing, borings, monitoring and analyses, manifests regarding handling, storage or transportation of Hazardous Materials, correspondence and agreements relating to Governmental Approvals, Orders on Contract, work authorizations, final quantities, pile driving records, records of accidents and traffic management, field test records and reports, concrete pour records, surfacing depth check records, grade and alignment books, cross-section notes, drainage notes, photographs, false work and form plans, records of construction materials, and any other documents which can be reasonably described as technical or engineering documents. Work Product expressly excludes, however, documents and information which the Design-Builder and Department mutually agree in writing, or which a court determines, to be exempted or protected from public disclosure.

**Work Zone Traffic Control Plan** – The required plan for traffic control and management developed by Design-Builder.

**Workforce Participation Plan** – A plan prepared by Design-Builder addressing Design-Builder’s and Subcontractors’ workforces and equal employment opportunity goals.

**Working Plans** – Those plans prepared by the Design-Builder to supplement Design Plans to specify additional details and procedures for construction of the Project, including the following:

A) Construction details;
B) Demolition Plans;
C) Erection plans;
D) Fabrication plans;
E) Transportation plans
F) Storage plans
G) Field design change plans;
H) Stress sheets;
I) Shop plans;
J) Lift plans;
K) Bending diagrams for reinforcing steel;
B) That all non-design Work the Project shall be free of defects including design defects, errors, and omissions and that the Project shall be fit for use for the intended function; and

C) That all materials and equipment furnished under the Contract Documents shall be of good quality and new.

In addition, the Department may require, subject to express agreement in writing between the Department and the Design-Builder, with approval from the FHWA when required, warranties associated with the contract for limited circumstances. A prototype warranty specification is available from the Department for the purpose of the Design-Builder’s providing a warranty for a particular item, as opposed to providing a warranty for an entire contract. The product warranty will be developed between the Department and the Design-Builder with input from appropriate technical experts and the Office of Legal Affairs Division in conjunction with the Office of Construction Division, and incorporated into the contract via order-on-contract. The warranty may be used in situations including, but not limited to, work performed not in full compliance with the contract documents, where initial testing does not indicate any deficiency in the end product.

If the Department determines that any of the Work has not met the standards set forth in this DB §104-15 at any time during the Warranty period for such Work, then the Design-Builder shall correct such Work as specified below even if the performance of such correction Work extends beyond the stated Warranty period.

Within seven days of receipt by the Design-Builder of notice from the Department specifying a failure of any of the Work to satisfy the Design-Builder’s Warranties, or of any Subcontractor representation, warranty, guarantee, or obligation which the Design-Builder is responsible to enforce, the Design-Builder and the Department shall mutually agree when and how the Design-Builder shall remedy such violation, provided, however, that in case of an emergency requiring immediate curative action, the Design-Builder shall implement such action as it deems necessary and shall notify the Department of the urgency of a decision. The Design-Builder and the Department shall agree on a remedy immediately upon notice by or to the Department of such emergency. If the Design-Builder does not use its best efforts to proceed to effectuate such remedy within the agreed time, or if the Design-Builder and the Department fail to reach such an agreement within such seven-day period (or immediately, in the case of emergency conditions), then the Department, upon notice to the Design-Builder, shall have the right to order the Design-Builder to perform the work or to perform or have performed by third parties the necessary Department-approved remedy, and the costs thereof shall be borne by the Design-Builder.

**DB 104-15.2 Warranty Period**

Warranties for all Work shall commence upon Project Completion and shall remain in effect until two years after the date that Final Acceptance is achieved. If the Department determines that any of the Work has not met the standards set forth in this DB §104-15 at any time during the Warranty period for such Work, then the Design-Builder shall correct such Work as specified below even if the performance of such correction Work extends beyond the stated Warranty period.

Within seven days of receipt by the Design-Builder of notice from the Department specifying a failure of any of the Work to satisfy the Design-Builder’s Warranties, or of any Subcontractor representation, warranty, guarantee, or obligation which the Design-Builder is responsible to
DB 105-7.9 Subcontracts

The Design-Builder shall insert in all Subcontracts and supply agreements a requirement that the Subcontractor or supplier shall stop Work on the date and to the extent specified in a Notice of Termination from the Department in accordance with this DB §105-7, and shall require Subcontractors to insert the same provision in each Subcontract and supply agreement at all tiers.

For the purposes of DB §105-7.4.2 and DB §105-7.5, upon termination under DB §105-7.2(D) of Work under any Subcontract or supply agreement, the Design-Builder will not be entitled to reimbursement for that portion of the termination settlement with any such Subcontractor or supplier which constitutes anticipatory or unearned profit on Work not performed, or which constitutes consequential damages on account of the termination or partial termination.

DB 105-7.10 No Unearned Profits or Consequential Damages

Under no circumstances shall the Design-Builder be entitled to anticipatory or unearned profits or consequential or other damages as a result of a termination or partial termination under this DB §105-7. The payment to the Design-Builder determined in accordance with this DB §105-7 constitutes the Design-Builder’s sole and exclusive remedy for a termination under this DB §105-7.

As set forth herein, the Department waives claims for consequential damages against the Design-Builder arising out of or resulting from the Work under this Contract in the following instances: consequential damages incurred by the Owner for rental expenses, for loss of use, income, profit, or reputation, for business interruption, for interest and financing charges, for depreciation, and for loss of management or employee productivity.

The waiver of consequential damages does not include third-party claims for consequential damages, or any damages other than those set forth above, or any damage or assessment provisions set forth elsewhere in this Contract, including but not limited to: consequential and other damages in the event of default by the Design-Builder or termination of the Design-Builder for cause; liquidated damages; engineering charges; lane rental charges; or incentive or disincentive payments; or third-party claims for consequential damages. For the purposes of clarity, the waiver of claims set forth herein shall not limit the Indemnification requirements set forth in this Contract, and thus the requirement to indemnify against “damages . . . of every name and description,” including consequential damages, remains undisturbed.”

DB 105-7.11 No Waiver

Termination for convenience shall not result in a forfeiture by the Department of damages it may be entitled to in connection with any default, except to the extent that settlement of such damages was included in the calculation of the compensation owing the Design-Builder upon the termination for convenience.

DB 105-7.12 Dispute Resolution

Any failure of the parties to agree on amounts due under this DB §105-7 shall be a Dispute to be resolved in accordance with DB §109-10.

DB 105-7.13 Allowability of Costs

All costs claimed by Design-Builder under this DB §105-7 shall, at a minimum, be allowable, allocable and reasonable in accordance with the cost principles and procedures of 48 CFR Part 31.
railroad or public utility whose property or facilities are affected by the Work from suits, claims, actions, damages, and costs of every name and description resulting from negligent or otherwise tortious acts, errors or omissions of the Design-Builder, or acts by the Design-Builder which infringe intellectual property rights or trade secrets, made in connection with the Work under this Contract and until the Final Acceptance thereof; (b) with respect to personal injury or property damage occurring after Final Acceptance and not covered by the indemnity in clause 107-27.1(a), the Design-Builder shall indemnify, hold harmless, and release the Department and/or the State of New York, any municipality in which the Work is being performed; and/or any public benefit corporation, railroad or public utility from suits, claims, actions, damages, and costs of every name and description resulting from negligent or otherwise tortious acts, errors or omissions of the Design-Builder in connection with its services under the Contract Documents; and (c) the Design-Builder shall indemnify, hold harmless, and release the Department’s Inspector from suits, claims, actions, damages, and costs involving personal injury and property damage resulting from the Design-Builder’s Work under the Contract during its prosecution and until the Final Acceptance thereof. The Department may retain such monies from the amount due the Design-Builder as may be necessary to satisfy any claim for damages recovered against the Department, any municipality in which the Work is being performed, any public benefit corporation, railroad, or public utility whose property or facilities are affected by the Work, or the Department’s Inspectors. The Design-Builder’s obligation under this paragraph shall not be deemed waived by the failure of the Department to retain the whole or any part of such monies due the Design-Builder, or where such suit, action, damages, and/or costs have not been resolved or determined prior to release of any monies to the Design-Builder under the Contract. Such obligation shall not be deemed limited or discharged by the enumeration or procurement of any insurance for liability for damages imposed by law upon the Design-Builder, Subcontractors, the Department, the State, any municipality in which the Work is being performed, any public benefit corporation, railroad, or public utility whose property or facilities are affected by the Work, or any Department consultants or contractors working relative to the Project.

The Design-Builder has the obligation, at its own expense, for the defense of any action or proceeding which may be brought against the parties specified in this Section. This obligation shall include the cost of attorney fees, disbursements, costs, and other expenses incurred in connection with such action or proceeding. The provisions of this section shall survive the expiration or termination of the Contract.

Without limiting the generality of the foregoing, Design-Builder’s obligation to indemnify, save harmless and release the Persons identified in this DB §107-27.1 specifically includes any suits, claims, actions, damages, and costs of every name and description resulting from any spill or release or threatened spill or release of a Hazardous Material (i) attributable to the negligence, willful misconduct or breach of contract by Design-Builder, its Subcontractors or agents, or (ii) which was brought onto the Site by Design-Builder or any of its Subcontractors or agents.

Notwithstanding the foregoing, the Department reserves the right to join such action, at its sole expense, when it determines there is an issue involving a significant public interest.

Such obligation does not extend to those suits, actions, damages, and costs of every name which arise out of the sole negligence of the Department, the State of New York, any municipality in which the Work is being performed, any public benefit corporation, railroad, or public utility whose property or facilities are affected by the Work of the Project, or any Department consultants or contractors working relative to the Project, their agents, or their employees.
The Design-Builder shall use the following table as a guide for development of a Quality Control Plan, as a minimum level of Quality Control (QC) activities, as defined in DB Section 113. The Quality Control Plan shall provide for materials quality control and construction Inspection (CI) practices oversight. In general, the Design-Builder shall employ an independent Construction Inspection Professional Engineering Firm and a Materials and Testing Firm or Laboratory that will be responsible to assure compliance of materials and construction inspection activities to all Department standards.

The frequency of QC activities shall be at least equal to current Department practices as established in the Specifications, Materials Methods and Procedures, Granular Control Procedures, and other Department documents. The Quality Control Plan will specifically and clearly define all QC activities to be performed by the Design-Builder, documentation and records to be managed including forms that will be used, and frequencies of sampling and testing.

The Design-Builder shall provide in the Quality Control Plan all the various materials planned for use and the specific certifications and/or sampling and testing to be progressed for QC purposes to assure durability of the material. For development of the Quality Control Plan, the DB should be aware of the following materials considerations:

- All domestic off-site materials sampling and testing for QA operations will be performed by the Department. This includes but is not limited to earthwork and gravel borrow sources, Hot Mix Asphalt materials and production, Concrete materials and concrete production, steel, precast products, masonry, bearings, structural steel paints – shop applied, bridge railing, guiderail, traffic control materials, sign structures, frames and grates, and any other materials deemed necessary to assure product quality. The Design-Builder may perform QC as deemed appropriate or desired at off site locations.

- Bearing production at manufacturer’s locations will be observed by the Department however, the Design-Builder shall be responsible for hiring an independent testing firm or laboratory to perform all bearing testing. The Design-Builder shall receive from the independent lab a certification that all bearings are in conformance to specification requirements. The Department will perform sampling and testing for verification purposes.

Use of Approved List materials is expected for commonly available products. Use of materials that are not on the Approved List, but for which an Approved List category exists, will require the Design-Builder to provide appropriate evaluation and test results, conforming to current DOT procedures for product evaluation, to prove durability of the material for the planned use, to the satisfaction of the Department. Such product evaluation will typically consist of lab testing per AASHTO, ASTM, or Department requirements, performed by an independent certified laboratory. Upon verification of product acceptability by the Department, the product(s) will be included on the Approved List of Materials. Products where acceptability cannot be verified cannot be used and will not be included on the Department’s Approved List of Materials. Products previously approved by the Department’s New Product Evaluation Committee may be used however, sampling and testing results may be required.

Use of materials for which there is not an Approved List category will require, in the Quality Control Plan, those tests and evaluations to prove the durability of unique materials before use in the Project. In many cases, physical testing should be performed by an independent laboratory. A planned frequency of sampling and testing, commensurate with the level of risk of the product proposed for use, must be provided in the Quality Control Plan.
New York State Department of Transportation

The forms listed in the column “Documentation Form(s)” are those that the Department presently uses. The Design-Builder may use their own forms, provided that their forms record the same information documented by the Department’s forms.

The Department will use Random Independent materials sampling and testing for both acceptance and/or verification of QC sampling and test data. In addition, the Department will verify compliance to the policies and processes of the Construction Inspection Professional Engineering Firm, the Materials Testing Firm and Material Testing Laboratories, as defined in the Construction Quality Control Plan to insure conformance with the Contract Documents. The Department will progress QA for materials acceptance and verification that the Construction Inspection Professional Engineer Firm and the Materials Testing Firm or Laboratory are controlling QC activities in conformance with the Contract Documents.

Quality Assurance acceptance decisions that incorporate the use of on the Design-Builder’s QC data and activities may be progressed as described in Appendix 112C-Attachment 1 according to values defined in the “Quality Assurance Actions / Frequencies” column of the following table. The level of risk for various items will determine the frequency at which the Department will conduct, perform Quality Assurance / verification sampling and testing. Statistical methods may be considered for use by the Department to evaluate the effectiveness of sampling and testing results from QC for use as acceptance. The QA Actions and Frequencies column defines those actions and the frequency thereof that the Department expects to take to provide Quality Assurance of materials and construction inspection activities. Final determination of these actions and frequencies will be developed specific to the Quality Control Plan provided by the Design-Builder.

QA of Construction Inspection operations will typically consist of verifying that the Design-Builder, Construction Inspection Professional Engineering Firm, and the Materials Testing Firm and Materials Testing Laboratories are meeting contract requirements and adhering to Department Specifications and Standards and/or the Design-Builder’s Quality Control Plan. The Department shall have the authority to perform sufficient inspections and/or tests of the Design-Builder’s Work to verify that the inspections and/or tests performed by the independent Construction Inspection Professional Engineering Firm and the Materials Testing Firm or Laboratory are in compliance with the Contract, the design and specifications, the Design-Builder’s approved Quality Control Plan, as well as the Department’s standards and practices.

The Department will have access to all activities and records of the Design-Builder, the Construction Inspection Professional Engineering Firm and the Materials Testing Firm or Laboratory retained by the Design-Builder for the purpose of assuring that the construction and inspection activities are being conducted in compliance with the Contract, the design and specifications, the Design-Builder’s approved Quality Control Plan, as well as the Department’s standards and practices.

All verified QC and QA activities are used in the acceptance decision of the Department that will provide assurance that materials and methods are such that when Final Acceptance of the Project is requested, the Department is confident that all materials incorporated into the project and the associated workmanship conform to plans, specifications, standards and contract requirements, and work conforms to plans, specifications, and standards. These verifications will document the acceptance of the work for payment purposes and assure all non-conformances have been satisfactorily addressed.

The Department shall have the authority to stop work specific to Work Zone Traffic Control for all work sites and for the overall safety of the work site to ensure that it is safe for the workers, the inspection staff and the public.

Nothing in the scope of the Department’s QA role shall be construed to relieve the Design-Builder the Construction Inspection Professional Engineering Firm and the Materials Testing Firm or Laboratory of their responsibilities for full time construction inspection and compliance with the Contract, the design and specifications, the Design-Builder’s approved Quality Control Plan, as well as the Department’s standards and practices.
The Design-Builder (DB) shall use this Appendix DB 112B as a guide for development of a Quality Control Plan as defined in DB Section 113. The Quality Control Plan shall provide for materials quality control (QC) and construction inspection (CI) practices oversight. In general, the DB shall employ an independent Construction Inspection Professional Engineering Quality Control Firm and a Materials Testing Firm or Laboratory (referred herein as the QC/CI firm) that will be responsible to assure compliance of materials and construction inspection activities to all Department standards.

The DB shall provide in the Quality Control Plan all the various materials planned for use and the specific certifications and/or sampling and testing to be progressed for QC purposes to assure durability of the material. For development of the Quality Control Plan, the DB should be aware that the fundamental principle behind the approach is to assign the appropriate level of resources to monitor and evaluate each analysis category based on NYSDOT’s residual risk after the DB has completed construction. In general, the higher the residual risk for the performance of the material the higher the level of monitoring and verification. The stronger the relationship between the material property being tested and the material’s performance, the higher the level of monitoring and verification required.

The Construction Inspection Professional Engineering Firm’s frequency of QC operations shall be at least equal to current Department practices as established in Specifications, Materials Methods and Procedures, Granular Control Procedures, and other Department documents. This Appendix DB 112B provides a list of these documents that define current Department sampling and testing practices.

The Documents listed below in effect on the proposal due date (as shown in the RFP Instructions to Proposers, Section 1.6.1) shall be applicable to the Project.

<table>
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<th>NYSDOT – Materials Various Reference Documents</th>
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<td><strong>TITLE</strong></td>
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<td>Standard Specifications for Construction and Materials</td>
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<td>MURK Part 1B Construction Inspection Manual</td>
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<td>MURK Part 2A Materials Inspection Manual</td>
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<td>Materials Inspection Manual</td>
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KOSCIUSZKO BRIDGE PROJECT – PHASE 1
(BIN 1075699)

PIN X731.24, Contract D900011

CONTRACT DOCUMENTS
PART 2

DB SECTION 112
CONSTRUCTION QUALITY CONTROL AND
QUALITY ASSURANCE

DB APPENDIX 112C
QUALITY ASSURANCE PLAN
PROGRAM GUIDE

ADDENDUM #7 - NOVEMBER 19, 2013
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# Quality Assurance Plan Program Guide

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SECTION 1  OVERVIEW

The primary objectives of this guide are to:

- Provide consistency and practical guidance in the Design-Build Quality Assurance Program implementation processes on NYSDOT Design-Build projects;
- Outline the processes for reviewing and accepting the Design-Builder’s Quality Control Plan for control of design and construction activities; and
- Define expected Department oversight staffing and resources needs as well as define the specific roles, responsibilities and procedures for design and construction oversight; inclusive of Design Reviews, Construction Inspection, Material Acceptance that incorporates Department QA actions, verification sampling and testing, dispute resolution, and Independent Assurance Sampling and Testing requirements progressed during construction to aid in the final acceptance process of the project.

This Quality Assurance Plan Program Guide is intended to generically define outline the Department’s roles and responsibilities to provide stewardship and Design/Construction oversight for all sizes and types of Design-Build Projects. This Guide, is meant to dovetail with the Design-Builder’s Quality Control Plan (ref. DB §113). Taken together, they form the Quality Control/Assurance Program for the Project. Once the Design–Builder’s QC Plan is approved and preliminary designs are provided to forecast pay-item quantities, it is recommended that the Department may develop a more tailored Project Specific Quality Assurance Plan; thereby, clearly assigning appropriate levels of Department Oversight—based upon known and/or anticipated quantities on the project.

In conformance to these minimum requirements, the Design-Builder shall satisfy both State and Federal design and construction quality requirements (Ref. 23CFR637).

This Guide’s primary purpose is to define the Department’s project level oversight for design and construction. The guide should provide further insight into the Department’s Oversight and Verification activities that will aid the Design-Builder in the preparation of an acceptable QC Plan (reference: Design-Build DB §111, §112, and §113). The Design Builder’s Quality Control Plan should define a series of business processes that articulate the Design–Builder’s approach to design and construction quality management, quality procedures, records keeping and document management and control that the Design-Builder shall adhere to throughout the duration of the Project. The QC Plan should further describe the reporting and documentation processes and should outline appropriate responsibilities of the Design-Builder’s organization that will implement the QC Plan. The QC Plan consists of integrated components to address should integrate Design QC and Construction QC procedures and processes.

1.1  BACKGROUND

On traditional NYSDOT Design-Bid-Build (DBB) projects, the acceptance decision strictly utilizes the Department’s (QA)sampling and testing results based upon various specification requirements, Material Methods, Material Procedures, the Material Inspection Manual (MIM), Control of Granular Materials Procedures, the Construction Inspection Manual (CIM), Manual of Uniform Record Keeping (MURK), and other Department requirements. This method of acceptance encompasses all of NYSDOT’s traditional DBB projects; whereby, the Department,
or its agents, performs QA sampling and testing to form the final material acceptance. Since all the data that went into the acceptance decision was solely the Departments (QA) data, and did not incorporate Contractor’s QC data, there was no need for verification sampling and testing of the QC data. On Design-Build Projects, however, NYSDOT has chosen to incorporate the Design-Builders Quality Control (QC) sampling and testing data into the acceptance decision; thereby, transferring more responsibility onto the Design Builders QC program. Quality Assurance and material acceptance on traditional NYSDOT design-bid-build projects has long been addressed through the use of various specification requirements, Materials Methods, Materials Procedures, the Materials Inspection Manual (MIM), Granular Control Procedures, the Construction Inspection Manual (CIM), Manual of Uniform Record Keeping (MURK) procedures, and other Department requirements. This traditional QA and material acceptance Program encompassed all of NYSDOT’s traditional design-bid-build projects whereby the Department, or its agent, would perform all the QA sampling and testing to provide the material testing data sufficient to form a final material acceptance decision. Since the Department performed the acceptance sampling and testing, there was no need for verification sampling and testing. On Design-Build projects, however, NYSDOT has chosen, in some circumstances, to transfer the responsibility for acceptance sampling and testing to the Design-Builders. Since the Design-Builder’s QC sampling and testing is used as part of the acceptance decision, the Code of Federal Regulations (CFR) requires verification of the Design-Builders’ sampling and testing results by the Department, or its agents. The use of Design-Build test results as part of the acceptance decision should be carefully evaluated for each project because a significant Department owner verification program is instrumental to the project’s success.

1.2 FHWA REQUIREMENTS

Nationally, in the 1980s, DBs began to assume testing and inspection responsibilities associated with quality control (QC) for project-produced materials. This created a perception that the testing effort was being duplicated, since the Design-Build performed QC testing and the state transportation agency performed acceptance testing. A revision of FHWA’s sampling and testing regulation titled “Quality Assurance Procedures for Construction” was published on June 29, 1995 as Title 23, Code of Federal Regulations, Part 637, (henceforth referred to as the CFR). This regulation permits the use of Design-Build test results in the acceptance decision, “provided that adequate checks and balances are in place to protect the public investment.” The purpose of the CFR is, “to prescribe policies, procedures, and guidelines to ensure the quality of materials and construction in all federally-aided highway projects on the National Highway System.” FHWA provided guidance and recommendations for the use and validation of Design-Build test results in the acceptance decision, recommended quality measures, and identified Design-Builder / Department risks in FHWA Technical Advisory T 6120.3, issued on August 9, 2004. FHWA later issued a non-regulatory supplement, NS 23 CFR 637B, on July 19, 2006 to provide additional guidance. Lastly, FHWA issues Technical Advisory HRT-12-039, in April of 2012, to further explain QC and QA requirements.

The four documents cited above are provided as Attachments B through D to this guide and are available at the following links:

- 23 CFR 637B: [http://www.access.gpo.gov/nara/cfr/waisidx_03/23cfr637_03.html](http://www.access.gpo.gov/nara/cfr/waisidx_03/23cfr637_03.html);
- TA T 6120.3: [http://www.fhwa.dot.gov/construction/t61203.cfm](http://www.fhwa.dot.gov/construction/t61203.cfm);
- NS 23 CFR 637B: [http://www.fhwa.dot.gov/legsregs/directives/fapg/0637bsup.htm](http://www.fhwa.dot.gov/legsregs/directives/fapg/0637bsup.htm); and
The following are key points from the CFR, technical advisory, and non-regulatory supplement as it pertains to the use of Design-Builder test results in the acceptance decision.

1. Quality Assurance Program. Each State Highway Agency (SHA) must develop a quality assurance program that will assure materials and workmanship incorporated into each federally-aided highway construction project on the national highway system is in conformity with the requirements of the approved plans and specifications, including approved changes. The program must meet the criteria in 23 CFR 637.207 and be approved by FHWA. Each SHA’s quality assurance program shall provide for an acceptance program and an independent assurance (IA) program.

2. Independent Assurance Program. The Design-Builder’s QC Material Testing Technicians and the owner verification sampling and testing Material Testing Inspectors are evaluated by an independent assurance (IA) program. The program is focused on evaluating Material Acceptance Technicians/Inspectors sampling and testing procedural techniques and proper use and calibration of testing equipment to insure that it complies with accepted test methods. The program is administered by the Department, with a goal of conducting one IA inspection per material acceptance inspection technician per year. The IA inspection may cover a variety of test methods used in the acceptance decision.

3. Acceptance Program. The Design Builders’ Quality Control sampling and testing results may be used as part of the acceptance decision provided that:

- The sampling and testing has been performed by qualified laboratories, using qualified sampling and testing personnel.
- The quality of the material has been validated by verification of the testing and sampling. The verification sampling will be performed on samples taken independently of the quality acceptance samples.
- An IA program will evaluate the quality control sampling and testing.

4. Verification Sampling and Testing. The verification sampling and testing are to be performed using random independent test samples taken by qualified testing personnel employed by the SHA or its designated agent, excluding the Design-Builder and vendor.

5. Dispute Resolution System. If the results from the quality control (QC) sampling and testing are used in the acceptance program, the SHA must establish a dispute resolution system. The dispute resolution system provides a process to resolve discrepancies occurring between the Departments QA verification sampling and testing and the Design Builders quality control acceptance sampling and testing. The dispute resolution system may be administered entirely within the SHA, or by a third party.

6. Random Samples. All results used for QA, verification sampling, and testing must be obtained from random samples.

Information contained in FHWA Technical Advisory T 6120.3 (Attachment C link shown above) supersedes earlier FHWA direction and stands as the most current guidance on this subject matter. The advisory discusses the use of Design-Builder tests results for acceptance
purposes, the requirements for verification sampling and testing, and statistical validation procedures on random-independent samples. In the discussion on validation procedures performed on independent samples, the Technical Advisory recommends the use of the statistical tools such as the F-test and t-test because, “they have more power to detect actual differences.” More information on statistical procedures can be found in course material for National Highway Institute (NHI) Course No. 134042, other FHWA publications, or regular statistics textbooks or handbooks. A review of current state construction Design-Build QA programs can be found in NCHRP Synthesis 346.

1.3 GENERAL APPROACH TO QUALITY

In accordance with DB §113, the Design-Builder must develop and submit a Quality Control Plan for Department approval within 30 days of Notice to Proceed. This plan encompasses QC activities and procedures for both design and construction operations. Included in the Quality Control Plan are all the personnel, management, organizational functions and responsibilities, documentation control, and quality of records records that will be used to control and ensure the appropriate project quality. This plan further addresses the specific design QC and construction QC oversight as required in DB §111 and §112 respectively. Tied to the QC operations established by the Design-Builder and approved by the Department, are the design and construction oversight actions of this Guide that define the Department’s roles, responsibilities and procedures.

Under Design-Build, the Contract places the responsibility and liability for the design and construction of the Project with the Design-Builder. The Design-Builder must follow the terms of the contract documents and fulfill its responsibilities as outlined therein for the design and construction of the Project. The Department does not need – and is not obligated – to review all Project documents or construction operations to ensure that the Design-Builder is meeting its contractual obligations because the Design-Builder is responsible for following the terms of the Contract, conducting QC, monitoring and inspecting all the Work, and producing the agreed-upon deliverables according to the schedule and cost outlined in the executed Contract. The Design-Build approach is very different from traditional design-bid-build (DBB) procurement method of project delivery, whereby a Department pays a contractor to build an asset, and the owner retains a significant role in controlling and approving the means, methods and materials used by the DBB contractor, approving design changes, inspecting the project during construction, performing QC and QA, and accepting the work at the end of construction. For a Design-Build Project, it is important that the Department’s staff some of whom may have no previous experience of Design-Build contracts are aware of the Design-Builder’s and the Department’s respective roles and responsibilities. This Guide is intended to assist them in this regard.

The spirit of a Design-Build methodology is that the Department provides the Design-Builder flexibility to determine the best means and methods by which to comply with the requirements of the Contract Documents. The Department’s responsibility in formulating acceptance decisions, is to conduct audits and inspections, as necessary, to determine whether the Design-Builder is following the processes defined, whether the Contract requirements have been met or not, and to communicate to the Design-Builder instances of non-compliance. The Department, however, is not obliged to suggest – and should generally refrain from suggesting – to the Design-Builder any approach to achieve compliance with the requirements of the Contract Documents.

Should the Department exercise more control over the project by providing specific direction or actions to take, then the risks associated with the project are transferred from the Design-
Builder back to the Department. Such a transfer of risk leads to disputes where the Design-Builder can be absolved of responsibility of any problems that may arise during the project or constitute additional payments for work progressed. For example, since the Contract specifies the deliverables that the Design-Builder must provide, if the Department describes the means and methods for producing the deliverables, the Design-Builder may establish a basis for transferring risk back to the Department. Accordingly, it is important for the Department to follow the terms of the Contract Documents; to follow the established processes when providing oversight; and to perform oversight without prescribing the means and methods by which the Design-Builder is to produce the deliverables. Department staff should refrain from directing the Design-Builders operations, unless it is a matter of safety, or providing an “acceptance or rejection” and simply audit the Work.

This Quality Assurance Plan Program Guide (QAPPG) established by NYSDOT and defined in this document ensures that design, materials, and workmanship incorporated intooffer comments. If necessary the project are in reasonable Department should issue Non-conformance with the approved plans and specifications, including any approved changes. This program is developed based on 23 CFR 637 Part B (Attachment B) and FHWA Technical Advisory T.6120.3 (Attachment C). Reports.

The Quality Assurance Program (QAP) for Design Build projects consists of the use of Qualified/Certified Inspection Technicians, Qualified Material Testing Laboratories, the Design Builders Quality Control (QC) program, the Departments Acceptance (QA program) that is based upon either random independent sampling and testing and/or the incorporation of QC sampling and test data once verified, and the Independent Assurance Sampling and Testing Program (IA). The overall program that consists of a QC program of the Design-Builder, QA program of the Department, and an IA program make up the Quality Assurance Program (QAP) for Design-Build projects.

The purpose of this guide is to provide statewide consistency and a programmatic approach to Design and Construction Oversight for Design-Build projects. It addresses Design Review procedures as well as materials and construction procedures for QA oversight including when and where the Design-Builder’s test results are used in the acceptance decision, regardless of how the project is funded. It clarifies federal requirements relating to QA and verification procedures related to owner verification. This document is to be included (or referenced) in the Request for Proposal (RFP) and other key procurement and preconstruction project documents and approvals by NYSDOT and FHWA. Any modification to the QAPPG requires review and approval by NYSDOT and FHWA.

For Construction Material Acceptance, when the Design Builder’s QC test data is used in the acceptance decision, as inspected per the recommended frequency established DB §442100, Appendix 112C – Attachment 1, NYSDOT is required to perform verification testing to verify and sometimes statistically validate the test data used by the Design-Builder.

To avoid the appearance of a conflict of interest, any (non-State DOT) qualified laboratory will perform only one of the following types of testing on the same project:

- QC testing,
- QA testing,
- Verification testing for the owner,
- IA testing, or
- Referee testing.
SECTION 2  QUALITY SYSTEM / QUALITY CONTROL PLAN REQUIREMENTS

The Design-Builder is required to develop a Quality Control Plan for the Project and submit it to the Department for approval in accordance with DB §113. The Design-Builder’s Quality Control Plan is required to describe in detail the Quality System to be implemented by the Design-Builder’s organisation at all levels, and describe all QC processes and procedures. Essentially, the Quality Control Plan will cover all aspects of all services rendered by the Design-Builder, materials supplied, design and construction activities, environmental compliance, health and safety, and all other works performed, including temporary works and materials which might influence the quality of the permanent works.

The Contract requirements stipulate that the Design-Builder is required to employ a QC Construction Inspection or an independent Professional Engineering Firm to undertake independent verification QC Construction Inspection of the Design-Builder’s design and construction of the project (see DB §111-1.6).

The Design-Builder is required, in accordance with DB §113-1, to submit its Quality Control Plan to the Department for approval within 30 days of Notice-To-Proceed. The Design-Builder’s Quality Control Plan shall be developed in accordance with the requirements of DB §113 and will shall describe the Quality System, resources and organization to be implemented at all levels of the Design-Builder’s organization, including design and construction Subcontractors, and shall describe all QC and QA processes and procedures. The Department’s required format for the Quality Control Plan, describing various sections / heading and descriptions of details for each section will be provided to the Design-Builder so that every Quality Control Plan is consistent and easier for Department staff to follow review and understand.

As per the requirements of DB §113-1, the Quality Control Plan is required to be developed that reflects a minimum level of inspection and documentation consistent with sampling and testing frequencies found in NYSDOT Manuals (Contract Administration Manual, Materials Inspection Manual and Construction Inspection Manual).

The Department’s role is to provide approval/ concurrence that the Design-Builder has developed its Quality Control Plan and described the Design Builders’ Quality System in accordance with the Contract Requirements and is implementing the Quality System in accordance with the processes and procedures outlined in the Quality Control Plan to meet Contract Requirements.

The Department is required to review, and approve the Design-Builder’s Quality Control Plan. Thereafter, the Department should will audit the procedures outlined in the Quality Control Plan and conduct oversight activities to ensure the Design-Builder’s design and construction work and/ or other activities are in compliance with the defined Quality Control Plan procedures and the Contract Requirements.

The Department’s Project Manager will direct a member or members of the Department’s staff to be responsible for reviewing the Design-Builder’s Quality Control Plan and all revisions to same as the work progresses. The review may require consultation with multiple disciplines within the Department to insure that proper procedures and processes are being proposed. The responsible reviewer should make a recommendation to the Department’s Project Manager to approve the DB Quality Control Plan as is, or provide recommended improvements with a firm date of resubmitted back to the Department for final review. The Department’s Project
Manager will formally relay the approval/comments back to the Design-Builder in a timely fashion. Unless otherwise stated in the contract documents, the maximum turnaround time for this review is 28 calendar days from the date of receipt of the Quality Control Plan.

On receipt of the Design-Builder’s Quality Control Plan, the Department’s responsible person(s) appointed by the Department’s Project Manager shall review the Quality Control Plan to ensure that:

- It is developed from, and consistent with, the Design-Builder’s Proposal Initial Quality Control Plan that was submitted as part of the Design-Builder’s Technical Proposal at RFP stage.

- The Quality Control Plan follows a prescribed Department outline.

- The Quality Control Plan clearly articulates the processes and procedures the Design-Builder’s staff will follow in executing an activity.

- The Quality Control Plan for the Design and Construction Phase is consistent with the Initial Quality Control Plan and expanded accordingly in accordance with the Contract Requirements, and in particular the requirements as outlined in DB §113.

- At a minimum, the Quality Control procedures for Design and Construction are coordinated and compatible with each other.

- It adheres to the requirements as outlined in DB §113.

The Design-Builder is required to update the Quality Control Plan throughout the Project duration to reflect current or changed conditions as the Works progress. Each such revision is required to be submitted to the Department’s Project Manager for approval within 30 days of the identification of a need for a revision (DB §113-1.2). Each revision of the Quality Control Plan should be similarly reviewed by the Department at a minimum. The responsible people performing reviews should preferably include staff within Design and Construction. Staff from additional disciplines of the Department may also be considered depending on the work elements of the project.
SECTION 3 DESIGN MANAGEMENT AND DESIGN QUALITY ASSURANCE

The Department's representative, the Design Quality Assurance Engineer (DQAE), will provide continuous design oversight throughout the Project. See Sections 3.1 through 3.6 for a discussion of the Department’s design oversight activities.

Design will not be considered complete until all As-built Plans have been reviewed and approved by the Department.

The Department and the Design-BUILDER will meet and mutually agree on the schedule and duration of Design Reviews. The initial schedule will be verified and modified by mutual consent during the course of the Contract. The Design-BUILDER is required to give the DQAE at least one week's notice prior to any Design Review.

3.1 GENERAL

The contractual requirements for design management and Design QC are the primary responsibility of the Design-BUILDER rather than the Department and are presented in the DB §111. The following sections, based on DB §111, highlight the Department’s Design QA activities.

The Design-BUILDER is required to identify Design Units, those components of the Project that will be produced as an integral, but independent, component of the Project. A Design Unit will have a single “responsible engineer” who will direct and sign off on the final design of that component by the Design-BUILDER. Within 30 days of NTP, the Design Builder shall provide a written report indentifying each Design Unit. The report shall include the Design Unit description and the planned review stages and dates, including specific information to be reviewed. (Ref. DB §111-3 Design Units)

For example, a Design Unit may be any of the following:

- A bridge;
- A section of roadway;
- A retaining structure;
- Certain Utility Relocations; or
- Work Zone Traffic Control.

The identification of Design Units is intended to facilitate scheduling of Department participation in the design and Design Review processes.

The stages of design development are designated as follows:

- Definitive Design - The stage of design development where the design concepts and parameters are established that will be followed through to completion of the Project;
1. READINESS FOR CONSTRUCTION DESIGN

- Readiness for construction design, where the design is progressed to the point where components of the facility can be released for construction. There may be more than one stage of readiness for construction design where the Project component is built in stages, with each stage requiring a review of the design before construction can proceed further. (Design-Build Project Documents §111-12.5 discuss for the Design-Builder’s Readiness for Construction requirements and Department interaction)

- Interim design, where the design is being progressed to final design without intermediate releases for construction. When design is progressed in this manner, at least one interim Design Review is required between the Definitive Design Review and the Final Design Review.

- Release for Construction - The stage of design development after Final Design where the Design Plans and Project Specifications for a Design Unit or a component thereof are 100% complete and satisfy the requirements of DB §111-11.6;

- Interim design - The stage of design development after Definitive Design where the Design Plans and Project Specifications for a Design Unit are at the 60% to 80% stage of completion;

- Final Design, where the design is - The stage of design development, after Interim Design, at which time the Design Plans and Project Specifications for a Design Unit are 100% complete;

- Working Plans, which includes working drawings, shop drawings, fabrication drawings, and similar documents that provide more specific construction detail; and

- As-built design, the plans and specifications that actually represent the as-constructed project.

Typically “Design Acceptance” by the Department will not take place until the As-built Plans have been reviewed and approved; however, the Department has a responsibility to review and comment on the proposed design.

During the course of the Department’s participation in design reviews, Department representatives will be careful about offering, suggesting, or ordering solutions to design problems. The Department may offer or suggest possible solutions to the Design-Builder with the express provision that the Design-Builder is not bound to accept the suggestion. If a solution is ordered and the Designer incorporates the solution in its design, the Department may transfer the risk for the adequacy and appropriateness of the Department-ordered solution from the Design-Builder to the Department, even though the Design-Builder would be responsible for designing the Department solution correctly. Department comments during the review process should focus on whether or not the proposed solution or process meets the contract requirements as specified. If the Department decides the specified requirements in the contract are not adequate, it may change those requirements, but the Design-Builder may be entitled to adjustment in time and cost for incorporating the change(s).

3.2 DESIGN WORKSHOP

As noted in Section DB §111-16, within 45 days of NTP, the Design-Builder will arrange a design workshop to familiarize the Designer’s personnel and the Department (and Stakeholders,
if invited by the Department) review personnel with the design concepts, issues, status, and review procedures.

The Department and Design-Builders will jointly develop the agenda of the workshop and how it will be organized (i.e., by Design Unit and engineering discipline). The intent of the workshop is to make the subsequent Design Reviews more effective and efficient for all parties. The workshop will focus on a review of the critical design elements and criteria and on how the Designer plans to organize its design and conduct the reviews.

The Design-Builders are responsible for scheduling and conducting Design Reviews with the Department to meet design and/or construction needs of the Baseline Project Schedule. The Design Review process and frequency, duration, and intensity of Design Reviews will vary with the complexity of the individual Design Units and the associated construction activities. The Design-Builders shall include the agreed Design Review schedule for all Design Units as part of the Baseline Project Schedule. The agenda will include developing agreements regarding time allowed for design reviews (see DB §111-5). The duration of Design Reviews will be discussed and mutually agreed between the Department and Design-Builders during the Design Workshop and verified and modified by mutual agreement during the course of the Project. The Design-Builders will give written notice of scheduled Design-Reviews to the DQAE at least one week prior to any review.

Department participation in design task force or discipline meetings should be discussed to facilitate the “over-the-shoulder” (Oversight) Design Review process. The roles and relationships of the Designer and Department staffs should be spelled out and documented, including desired lines of communication—(Reference DB §111-1).

The interaction between Designer and Department staff will be continuous throughout the design process through the “over-the-shoulder” reviews that typically would consist of activities, such as:

- Participating in design meetings;
- Responding to design requests for information or clarification; and/or
- Auditing the design QC process and records.

Designer/Department contact will not be limited to Design Review periods as success of the project may be jeopardized.

Design Plan and Project Specification reviews and reviews of other Design documents will take place as scheduled by the Design-Builders to meet its design and construction schedule.

All agreements and understandings reached during the design workshop will be documented in writing and signed off agreed to by the Design-Builders’ Project Manager and the Department’s Project Manager.

3.3 DEPARTMENT’S ROLE AND DESIGN QUALITY ASSURANCE

The Department’s project staff oversight role during design and Design Review will consist of monitoring and auditing design progress, interpreting contract requirements, and verifying design compliance with contract requirements.
The Department’s oversight roles and activities relating to design will include, but not be limited to, the following:

- Assisting in providing interpretation and answers regarding contract requirements on a “real time” basis, often on a daily basis (such involvement is often referred to as “over-the-shoulder” review). By having continuous contact during the design process, the Department staff should face no “surprises” during the Design Reviews. Department staff should already know how the design is progressing and be fully informed of the issues;

- Providing input and participation in the review process as agreed during the design workshop;

- Verifying that the design meets the overall contract requirements, inclusive of any environmental mitigation commitments as defined during the NEPA process and included in the overall contract requirements. The Department’s participation in Design Reviews will not usually involve detailed checks of plans and calculations, except in unusual special cases;

- Verifying through audits of design QC process and associated records that the Design-Builder’s Design Quality Control Engineer (DQCE) is fulfilling his/her responsibilities and that the design quality procedures contained in the Quality Control Plan are being followed. An audit may include detailed checks of plans and calculations in some cases;

- Verifying Design-Builder’s progress for payment purposes; and

- Providing consultation and written comment at the successful completion of each Design Review that the design appears to meet the requirements of the Contract Documents.

The DQAE and other participants in design reviews will record their comments on Form DR (Design Review Comments).

The DQAE should record daily activities and observations on Form MURK 2b (DB-DQAE) (Exhibit V – Forms for Department Use).

During the design process, the Departments’ Oversight consists of two distinct elements:

- Auditing the Design-Builder’s Quality Control Plan Processes and Procedures; and

- Participation in the Design Review Process.

**Categorization of Levels of Review**

The level of review undertaken by the Department personnel will be tailored to the complexity, importance and level of risk of the Design Unit in question and will therefore be based on the Design Builder’s Design Unit Schedule as submitted with his proposal and finalized within 30 days of NTP. The following Oversight Approach will be followed:

**Categorization of Levels of Review**

Appropriate levels of review will be assigned determined by the DQAE after a review of the Design-Builder’s Design Unit Listing.
Level 1 Review. On a sample audit rate, design packages shall be subject to a Level 1 Review. Initially, a minimum of 10% sample rate frequency of Design Packages submitted shall be applied (ideally focusing on). In addition to the design “over the shoulder” review the following oversight approach will be followed:

Level 1 Review. Design packages of particular importance/complexity and risk – (Work Zone Traffic Control, Bridge Foundations, etc) shall be subject to a Level 1 Review. Initially, a minimum of 10% sample rate frequency of important and/or complex design packages submitted shall be applied potentially reducing to a 5% sample rate when satisfactory compliance has been demonstrated. Conversely, should compliance not be demonstrated satisfactorily, the sample rate will be increased. A 20% sample rate is proposed for a number of design elements.

For Level 1 Reviews:
- Check all items as required under a Level 3 review; and
- Also conduct a full detailed review (inclusive of independent calculations, assumptions, etc) of the design to be carried out to examine full compliance with the Contract.

Level 2 Review. These reviews involve design submissions that involve aspects that could involve public safety or public perception significance (e.g. bridge main span, rail interface, general road alignment, junction layouts, etc.) will be subject to a Level 2 review.

For Level 2 Reviews:
- Check all items as required under Level 3 review, and:
- Provide a focused review on just those identified limited number of critical public safety/public perception design elements

Level 3 Review. All design submission shall be subject to Level 3 Review.

For Level 3 Reviews:
- Check that all documents are provided;
- Check all certificates have been signed;
- Check the concepts appear correct and is consistent with the Definitive Design
- On a page/drawing turn basis, check if the design appears to comply with the Contract Requirements; and
- Check for obvious deficiencies.

On completing a review of Design documents, the Department may respond using one of two forms: Form DR (for comments) or Form NC-D (for non-conformances). The Design Builder is obligated to address these comments in consultation with the Department (DB111-112). The resolution of all comments and NC-D is tracked through the Design Builder’s Quality System.
3.4 DESIGN REVIEWS

Design Reviews will be conducted at each of the following stages of design development:

- **Working Plans**
- **Interim Design**
- **Final Design**
- **Definitive Design**
- **Readiness Release** for Construction
- **Interim Design**
- **Final Design**
- **Working Plans**
- **Definitive Design**
- Design Changes
- As-built Plans

The Design-Builder’s DQCE is responsible for conducting the Design Reviews with Department and Stakeholder participation, except for the As-built reviews. The review of As-built Plans will be performed by the Department with Design-Builder participation. FHWA participation can be expected in all Federal Aid funded projects “as-built” design reviews. Design Reviews are also required for all design changes that occur during design and/or construction.

Design Reviews are normally conducted in the offices of the Designer or Design-Builder. Design Reviews do not consist of packaging formal submittal documents and sending them off to Department offices for formal written reviews. If assistance from other Regions, the Department’s main office, or Stakeholder staff is required for a review, the Department project staff will invite them to participate in the review. If material needs to be sent to another location by the Department, the Department project staff will closely track the progress of the review and expected comments to ensure that the Department does not exceed the review time allowed in the contract.

The Department may wish to participate in the review of Working Plans, but will not actually review and approve them.

The Department’s Project Manager DQAE may provide Consultation and Written Comment on the design product before the design is released for construction. This Consultation and Written Comment does not constitute approval of the design. Design acceptance will not be given until the end of the Project after all As-built Plans have been reviewed and accepted.
3.5 NEGOTIATION OF ORDERS-ON-CONTRACT THAT INCLUDE DESIGN

The Department’s DQAE will be involved in the negotiation of Orders-on-Contract that include design work. Note that the Unit Prices included in the Schedule of Values (Option 1) do not include any costs associated with designing the work involved. Design costs must be negotiated separately.

3.6 DESIGN FORCE ACCOUNT WORK

The DQAE will be responsible for verifying the work involved in design Force Account Work and for signing-off on the Design-Builder’s design Force Account records on a daily basis. The actual mechanics of how this will be done will be covered in the initial design workshop or as part of the negotiation for extra work. Force Account records for design will be kept separate from construction Force Account records because different mark-up criteria apply.
SECTION 4 CONSTRUCTION MANAGEMENT AND CONSTRUCTION QUALITY ASSURANCE

4.1 GENERAL

As described in Chapter 1 above, Quality Assurance consists of those actions performed by the Department to verify the Design-Builder’s Quality Control Plan is being adhered to, that the RFP Contract requirements are met and that all Department standards are adhered to. On Design-Build projects the Department representatives are conducting two functions; one is to ensure that the Design-Builder is following the QC Plan procedures, and the second is to verify workmanship and the Design-Builder’s QC material testing data.

The Design-Builder is responsible through the Construction Quality Control Engineer to determine acceptability of materials for use and that proper construction practices are employed. Typically, adherence to Department approved materials requirements with appropriate sampling and testing methods and frequencies following Department procedures is expected. The Construction QC Engineer should also perform inspection of construction operations and progress documentation following MURK procedures, unless defined otherwise in the Quality Control Plan.

The Department’s QA process confirms both the Design-Builders adherence to the Quality Control Plan and bases material acceptance through verification of QC data, and verification of material acceptance using QC data, so that when the project is complete, final acceptance can be made with reasonable assurance that materials are acceptable and that construction procedures were progressed in a manner to assure the long term durability and performance of the project. Further details of Department staff duties follow later in this chapter.

Department QA consists of the following components for Construction oversight:

- Materials verification

The following listing of activities is an overview of the Department’s Design Quality Assurance Engineer’s oversight roles and activities relating to construction Quality Assurance of the Project. Refer to DB Sections 111 and 112 and DB Appendix 112 C – Attachment 1 for more details regarding the Department’s role in Construction Quality Assurance.

- Verifying that current stamped and signed Design Plans and Project Specifications are on-site;

- Confirming that the Design-Builder’s Construction QC staff:

  1) have the specified qualifications, licenses, and/or certifications;

  2) are present to observe and control the work;

  3) are performing their duties in accordance with contract requirements, specifically those specified in DB §112; and

  4) are conducting sampling and testing of materials at the proper frequencies.
• Confirming if differing site conditions and/or significant changes in the character of the work occur;

• Verifying progress, reviewing and approving payment requests;

• Auditing the Design-Builder’s construction QC records to verify that the Design-Builder is maintaining quality and is performing its QC responsibilities, and, if necessary, issuing Non-Conformance Reports for the Design-Builder to conform to the Quality Control Plan and to make corrections and preventive actions;

• Verifying records of Force Account Work. The Design-Builder will be responsible for maintaining the Force Account records, but the Department’s staff will spot-check the labor, equipment, and materials being used;

• Spot-checking measurements of any work paid on the basis of quantities and Unit Prices;

• Auditing safety and security records and checking of the qualifications of safety and security personnel;

• Spot-checking for compliance with Design Plans and Project Specifications, conducting verification (QA) sampling and testing and comparing Department’s CQAE records with the Design-Builder’s construction QC Inspection results;

• Reviewing and spot-checking Design-Builder’s Work Zone Traffic Control activities and installations;

• Participating in release for construction Design Reviews and reviews of Work Plans;

• Participating in the reviews of As-built Plans;

• Ensuring the Design-Builder is complying with the QC plan processes and procedures verification;

• Independent Assurance Sampling and Testing (IAST)

• Administrative procedures audits

• Certified payroll

• MURK procedures

• Other procedures as appropriate

• Assisting the Design-Builder in coordinating with appropriate State or federal agencies should unknown, unidentified Hazardous Materials be encountered;

• Spot-checking the Design-Builder’s QC Inspectors’ records for the remediation of Hazardous Materials;
New York State Department of Transportation

- Performing Construction QA and testing of materials to verify the Design-Build’s QC materials test data
- Coordinate with NYSDOT Regional IAST Staff to ensure that appropriate project staff get IA inspected;
- Monitoring Design-Build’s Utility Relocations and installations; and
- Verifying qualifications of Design-Build’s environmental staff, spot-checking of Design-Build’s compliance with environmental requirements; and, auditing of Design-Build’s environmental monitoring records.

The level of effort of verification by the Department both for materials and construction practices is dependent on risk. Risk is informally evaluated for impacts to long-term performance, impacts to operational and maintenance cost over the service life of the project, and public safety and perception regarding premature distresses and/or failures of the construction materials in question. The Design-Build assumes most of the risk and progresses work accordingly. This risk can be managed by providing utilizing Department Approved Materials materials and Manufactured Material sources lists, and appropriate QC testing methods and frequencies to limit failures of materials or non-conformance to acceptable construction procedures. It is the Department’s role to verify materials acceptability and testing results, assure compliance with construction procedure requirements and resultant workmanship, and perform IAST to assure testing is performed correctly.

On Design Build projects the Department is still responsible for the acceptance; however, the risk is shifted towards the Design Builder as the Department incorporates verified QC data and processes into the acceptance decision. Verification is the process of assuring specific products incorporated into this project and procedures used are acceptable. Material acceptance that incorporates the Design Builders QC data requires a higher frequency of QC testing and an abbreviated frequency of QA verification testing than traditional Design-Bid-Build Projects. The frequency of Verification (QA) testing is categorized by the Department into one of three risk factors that is dependent upon the long-term performance risk associated with the material and its use. The Department is not typically performing any acceptance testing directly of materials or practices. Rather, the Department is assuring the QC process is being followed and providing acceptable results so as to assure the overall quality of the project. Verification is the process of assuring specific products or procedures are acceptable. Material Acceptance verification is typically performed at much less a frequency than traditional acceptance testing and will consist of one of three risk factors depending on the risk associated with the material in use, as determined by the Department.

The fundamental principle behind using a three-tiered approach is to assign the appropriate level of resources to monitor and evaluate each item of work based on the Department’s risk. In general, the higher the risk associated with the long-term performance of the material and the higher usage on a project the greater frequency level of inspection and verification used in the acceptance decision.

The Department considers the material application and construction procedures to determine the overall risk associated with using a particular material or process. The risk is then defined as one of 3 risk factor levels, each addressing the expected QA needs. Detailed descriptions of each risk factor level are defined in §112, Appendix C112C and specific details for each item’s QA practices are provided. The 3 risk factor levels are described in general below.
4.2 MATERIAL SAMPLING, VERIFICATION TESTING & INSPECTION:

The recommended trigger quantities to determine risk factor verification levels, specific test criteria, and frequency of testing are defined in §112, Appendix C. The CQAE should assign 112C – Attachment 1. These are default values for Standard Specification items. For other materials, or where quantities may be significant, the CQAE should assign or revise the appropriate risk factor verification level during the development of the Project Specific Quality Assurance Plan once project specific item quantities can be determined to provide an accurate level of verification.

4.2.1 Risk Factor 1 (RF-1)

RF-1 provides continuous analysis using statistically based (F & t-testing) for those categories of materials and associated test methods that are strong indicators of long-term performance. These are typically considered high-risk, high-volume type materials incorporated into a Design-Build project. Examples include compressive strength for hydraulic or PCC concrete, percent soil compaction for embankment, and percent asphalt content for Hot Mix Asphalt Concrete. The Design-Build QC testing frequency is in compliance with various Department documents and the Department's Verification sampling and testing frequencies should be a minimum of 25% of the QC testing frequency. Acceptance is based upon both validation of statistical analysis of complimentary QC test data population and QA verification test data populations and both test results meeting acceptable material acceptance limits as defined in the contract documents.

Repeat failing test results should trigger a higher frequency of Verification testing and for those materials/test methods that have demonstrated high levels of repeated successful validation/specification compliance should be considered for reduced RF-1 inspection not to go below 10% of QC testing frequency.

When smaller quantities of high risk type materials are used, consideration for random sampling and test, independent from Design-Builder sampling and testing, may be appropriate at 25% of the QC testing frequency. Statistical comparison and/or validation methods may not be appropriate in these situations.

4.2.2 Risk Factor 2 (RF-2)

In addition to checking that all QC test results are within specification limits, the RF-2 verification provides independent verification of those materials and associated test methods that are secondary indicators of material performance. Verification testing, in the form of independent verification or split sampling with the QC test, that the test results fall within specification limits is typically appropriate. These materials/material tests are considered a reduced risk from RF-1. An example is the slump test for concrete. Approved list products that require more than manufacturer’s certification of compliance to assure quality are covered under this level of verification. The QA verification sampling and testing frequency should be a minimum of 10% of QC testing frequency. Acceptance is based upon verification test method results meeting the specification limits. No statistical validation is required.

4.2.3 Risk Factor 3 (RF-3)

RF-3 provides observation verification for those materials that only require very few QA tests for compliance with various Department documents or where materials are accepted based on the
inclusion in the Departments Approved List of materials. For these materials, risk of failure does not affect the long-term performance of the facility produced approved products are used. The Design—Builder is should still perform QC testing as required. Under RF-3 approach, the Department oversight does not perform and tests but observes any QC test performance for equipment and procedural compliance for a product, and/or perform. Examples are an audit of project procurement records to verify compliance withinclusion on the Departments Approved List, Certification of Compliance on record, Buy America Certification, etc. The frequency of this testing is a minimum of once per calendar year per test method and/or product, or random frequency as determined by the Department’s Project Manager.

In critical situations, Department verification will include hold or witness points to assure quality for those materials or procedures that, once used or completed, can’t be checked or removal is extremely difficult should deficiencies be discovered.

4.3 VERIFICATION SAMPLING & TESTING

The Department shall use a statistically sound process to compare the Design—Builder’s QC test results with those obtained by the Department, and then decide whether the results are statistically valid. The specific verification procedures will vary by material but the following is an abbreviated step by step procedure to familiarize the reader with the process:

1. The objective of the verification testing process is to validate and confirm if the Design Builder’s QC data came from the same population as the Departments Verification test data. The statistical process can help to identify discrepancies in the overall material, process, sampling, and testing processes. Verification testing should be conducted using random independent samples.

2. Verification testing will be undertaken using sampling and testing equipment that was not used for QC testing.

3. It is anticipated that the results of the verification testing will be made available to the Design Builder.

4. The results of the Design Builder’s QC test results and the Departments QA verification tests are compared. A statistical hypothesis test is carried out to analyze whether the Design Builder’s test and the Department’s tests are from the same population; i.e. the means of the two data sets are equal and the variances are also equal. The F-test provides a method for comparing the variances (standard deviation squared) of two sets of data. The calculated F-value is then compared to the critical value (Fcrit) obtained from a table of F-values at a chosen level of significance (α).

5. The t-test provides a method for comparing the means of two independent data sets and is used to assess the degree of differences in the means. If it is determined that the variances are assumed equal (F=Fcrit), then the t-test is conducted based on the two sample sets using a pooled estimate for the variance and pooled degrees of freedom. If the sample variances are determined to be different (either F≠Fcrit), then the t-test is conducted using the individual sample variances, the individual sample sizes, and the effective degrees of freedom. The calculated t-value is compared to the critical value (tcrit) obtained from a table of t-values at a specified level of significance.
6. If the t-test does not indicate similarity, a continuous analysis is relied upon. The p-values (from F- and t-tests) are reported for each analysis and tracked over time. This approach enables the efficient monitoring of the validation status on a daily basis and allows for more timely action to address non-validation. When using F and t-test for validation, the objective is to maximize verification sample size so as to have a sufficiently powerful analysis, while capping the maximum verification sample size so as to limit the detection of materially insignificant statistical differences. In the continuous analysis approach, the verification sample population increases as additional QC and QA verification test results are reported, up to a recommended maximum of 25 QA verification test or a maximum time period of 90 days. This approach allows the trending of whether F and test p-values verify the quality control test results at the specified level of significance. Thus the verification team can identify whether there is a positive validation trend (increasing confidence in validation) or a negative validation trend (decreasing confidence in validation).

7. It is highly encouraged, prior to starting production, that material testing laboratory test method specific correlation be conducted, as well as technician sampling and testing procedures be compared and correlated. Statistical Validation will identify, through investigations, subtle and allowable within the limits of the recognize test methods. For example, sulfur capping of concrete cylinders versus the use of neoprene rubber capping, both acceptable test method procedures used to prepare concrete cylinders for determining concrete compressive strength, yet if one method is employed by the QC laboratory and another is employed by the QA laboratory, assuming all data is within specification limits, the statistical analysis will probably not validate due to the subtle differences in test procedures.

4.4 MATERIALS OVERSIGHT

Materials shall conform to Department and contract the Contract requirements. The Department will perform sampling and testing of materials to assure that the Design-Builder’s QC actions are effective. Use of Approved List materials is expected for commonly available products. The Design-Builder will provide the required evidence of acceptability / manufacturers certifications as required by specifications. Other items will require QC evaluation prior to use as defined in DB §112, Appendix 112A.

Products and materials will have appropriate identification provided by the Design-Builder, from receipt and storage through installation. When materials arrive at the project site, receiving personnel will document receipt of the material in accordance with the appropriate procedure. The CQCE will check material for conformance to Project requirements. Any damage or deficiency will be noted. The materials will be used or stored as appropriate for the material.

The DepartmentCQAE will verify and document products and materials conformance to specifications of the project. Packing slips, mill certificates, or other documents from the Design-Builder showing conformance to requirements should be randomly reviewed by the CQAE and retained in project files by the Design-Builder.

Products or materials not immediately used will be stored in accordance with manufacturer’s directions and verified as such by the DepartmentCQAE. Some products and materials will require special measures to protect them from degradation. The manufacturers or supplier’s requirements will be followed in providing the proper environment for the products and
materials. The CQAE will provide QA of the Design-Builder’s management of stored materials under proper conditions.

In general, the role of the Department’s CQAE is to monitor, in a timely manner, the performance of materials sampling and testing commitments of the Design-Builder’s CQCE. The CQAE will perform sampling and testing of materials at frequencies defined in DB §112, Appendix C 112C – Attachment 1, consistent with the levels of risk and respective levels of verification testing for each specific item. All sampling and testing practices will conform to Department procedures and verification will be to show compliance with Department specifications or specific project requirements. The CQAE will document all sampling and testing performed, results, and retain samples as necessary.

Examples of materials sampling and testing might consist of:

- Sampling and testing of concrete for RF-1 conformance to specifications. Analysis of contractor test data using F- and T- statistical analysis as compared to Department test results would be performed.

- Independent sample testing of tack coat for RF-2 conformance to specifications to verify that the tack coat properties are within specification limits.

- Review of project records for materials certifications for soil and erosion control materials under RF-3, for products appearing on the Department’s Approved List of Materials. Cross check certifications to materials on site.

When sampling and testing are in compliance with project requirements or specifications, results should be reported in a timely manner to the Design-Builder. No further action is typically required.

If materials sampling or testing results do not meet the Contract requirements of the project or specifications, the CQAE will prepare a non-conformance report in a timely manner. It is the Design-Builder’s responsibility to review the findings of the QA sampling and testing, and take appropriate actions. Non-conformance findings will be reported and corrective action taken as appropriate for the work at hand. Actions could consist of but are not limited to remove and replace, remediate in place, remain in place without remediation, and/or consideration of price adjustments.

The Department will perform quality control tests and inspections during the production of the materials (produced off-site such as at PCC Plant inspection and HMA Plant Inspection), as materials arrive on the Project Site, and as they are incorporated into the construction. On-site QA tests and inspections will be performed by the Department after QC sampling and testing has confirmed acceptability of materials, and the frequency of any such testing will be as defined in DB §112, Appendix C 112C – Attachment 1.

4.4.1 Standard off-site manufactured materials / Approved List items

Because certain material production and/or locations are not conducive to QC by the Design-Builder, the Department will perform sampling and testing of various items for inclusion into the Department’s Approved List of Materials, adhering to standard evaluation requirements for
materials. The requirements and procedures for Approved List testing can be found at https://www.dot.ny.gov/divisions/engineering/technical-services/materials-bureau

4.4.2 Off-site manufactured / fabricated materials

Off site sampling and testing will be in conformance with Department Specifications. For larger projects (over $500M total project cost), the Design-Builder will be responsible for QC at the site of manufacture. In such a case, the Department will then provide off-site QA to verify the Design-Builder’s QC. Depending on sampling and testing procedures and risk factor, statistical evaluations may be required.

On smaller projects, where the Department conducts off-site QA material acceptance, in the same manner as traditional Design-bid-build projects, theDesign-Builder will hold the Department harmless for liabilities associated with schedule delays and/or impacts to contracted supplier-subcontractor business relationships. If this is unsatisfactory to the Design-Builder, the proposed Quality model used for large scale projects shall apply or as established in the project QC plan as an alternative.

For smaller projects and or very small quantities of specific materials, unless otherwise noted, the Department, using its own resources, will provide quality assurance inspection and/or testing of the off-site fabricated materials listed:

Off-site manufactured items subject to Department QA materials acceptance include:

- Prestressed Concrete Structural Elements (beams, girders (AASHTO and bulb-T), and piles
- Metal Traffic Signal and Light Poles and Arms
- Structural Steel Elements (beams and girders)
- Bridge Bearings
- Precast Concrete Materials Elements
- Pipe (concrete, steel, aluminum and high density polyethylene) for culverts, storm drains and underdrains
- Hot Mix Asphalt Concrete production – QC/QA program
- Portland Cement Concrete production
- Aggregate CMA QA program District Materials Section

Note: Where shop drawings are required for material production, the Departments QA responsibility is to verify production in conformance with specific shop drawings. Shop drawing reviews, when appropriate, should be addressed following Design QA requirements.
4.4.3 On-site fabricated materials / project produced materials

The Department will perform sampling and testing of on-site fabricated materials for use of proper raw materials, handling, placement, and/or storage until time of use. Various materials tests will be used dependent upon the material under evaluation. The type and amount of testing will be defined in DB §112, Appendix C.112C – Attachment 1. Critical items will require sampling and testing at greater frequencies, typically considered RF-1 as described earlier. Other items will be evaluated as RF-2 or RF-3 as appropriate. All Department-sampling and testing performed by the Department will be after the Design-BUILDER’s QC has progressed.

4.5 CONSTRUCTION QA - GENERAL

Construction practices used by the Design-BUILDER shall be as defined in the Contract documents and standard specifications. During construction operations, the CQAE will check various operations and compared them to the requirements set forth in Project documents and standard specifications. These checks will be performed following the appropriate procedure and documented by the CQAE. The Department shall have the right to audit, monitor, inspect and test the work as it progresses and the Design-BUILDER shall accommodate this process.

Routine review of the records produced by the Design-BUILDER’s QC staff should be performed to verify accurate recording of work activities, testing results, etc… are being progressed by the Design-BUILDER. DB §112, Appendix C112C – Attachment 1 defines the construction QA oversight of items used in the Work. Department Inspectors Construction Quality Assurance Engineers will document audits of construction operations on a daily work report or similar type record. The CQAE will maintain a daily Diary of the construction operations.

When construction operations are in compliance with Contract requirements or specifications, results should be reported in a timely manner to the Design-BUILDER. No further action is typically required.

If construction operations are not performed to the Contract requirements or specifications, the CQAE will progress prepare a non-conformance report in a timely manner. It is the Design-BUILDER’s responsibility to review the findings of the QA observations, and take appropriate actions to maintain quality. Non-conformance findings will be reported and corrective action taken as appropriate for the work at hand. Actions could consist of but are not limited to remove and replace, remediate in place, remain in place without remediation, and/or consideration of price adjustments.

Depending on the size of the project, there may be multiple categories of Department Inspectors, or a Department Inspector may be required to fulfill more than one role. The intent is not to duplicate inspection of the work provided by QC team but to verify QC data and documentation of the QC inspections.

Additionally, the Department will perform Independent Assurance Sampling and Testing (IAST), observations and oversight to assure adherence to the QC Plan developed for the project. All Design-BUILDER staff performing QC and the CQCE’s staff whose test data is used in the acceptance decision will be subject to IAST inspections by the Department.

4.6 WITNESS AND HOLD POINTS

Witness and Hold Points shall be established where notification of the Department and/or the Design-BUILDER’s design team (for elements of a project that require design team members
certification prior to continuation of Work), where applicable, is required for observing or visually examining a specific work operation or test. Witness Points are points identified within the Construction QC Plan and CPM schedule which require notification of the Department and/or design team, where applicable. Work may proceed beyond a Witness Point with or without participation by the Department provided proper notification has been given. However,

Work shall not proceed until certification from the required design team member is obtained. Hold Points are mandatory verification points identified within the Construction QC Plan and CPM schedule beyond which work cannot proceed until mandatory verification is performed. Witness and Hold Points shall be identified in DB §112, Appendix C, the Construction QC Plan, and/or the CPM schedule where critical characteristics are to be measured and maintained, and at points where it is nearly impossible to determine the adequacy of either materials or workmanship once work proceeds past this point.

For Witness and Hold points where the Department’s involvement is required, the Department’s CQAE will handle responses to the Design-Builder with written reports or releases. The time necessary to respond to the notification for inspection at Witness and Hold Points shall be stated in the Construction QC Plan, mutually agreed to by the Design-Builder and the Department and incorporated in the Design-Builder’s CPM schedule.

The Department shall have the right to stop work if the Design-Builder does not adhere to witness or hold points.

4.7 LABORATORIES FOR QA QUALITY ASSURANCE

All sampling and testing shall be performed by a laboratory that is accredited in the applicable AASHTO procedures by the AASHTO Accreditation Program (AAP). For test methods not accredited by AAP, the laboratory must comply with AASHTO R18 (most current Edition) and must be approved by the Department at its sole discretion. NYSDOT test methods will be provided when deemed appropriate.

All equipment used, whether at an established laboratory or satellite (field) laboratory, has to be calibrated/verified. The labs have uniform policies and procedures per AASHTO R-18 to ensure that they are providing testing services in compliance with applicable test methods. The policies and procedures address inspection and calibration of testing equipment, as well as a correlation-testing program between the laboratory and portable or satellite facilities.

The Department QA laboratories (Regional Laboratories or Central Office Laboratory) will not under any circumstances perform QC testing whatsoever.

4.8 VERIFICATION

Verification sampling, testing, observations, or other procedures will be performed by qualified sampling and testing personnel employed by the Department or its designated agent, reporting to the CQAE.

The Department shall hold final authority for determining the acceptable quality of materials and workmanship incorporated into the Project. QA decisions will consider:

- Results of Design-Builder QC sampling and testing at specified frequencies and locations.
• The Department's QA and Verification sampling and testing results;

• The Department's Independent Assurance Sampling and Testing (IAST) at specified frequencies and locations;

• Inspection by the Department of the attributes and processes that may affect the quality of the finished product; and

• Any dispute resolution procedures to resolve non-validation discrepancies between the Department's Verification Sampling and Testing and the Design-Builder's sampling and testing.

Individual materials and/or construction operations will not be accepted or rejected specifically except as noted for off-site locations. Materials and procedures that are in conformance with project requirements will be noted as such and reported to the Design-Builder. Materials, testing, or construction operations that are not in conformance to project requirements will be noted as non-conformances, reported to the Design-Builder, and actions taken as necessary by the Design-Builder to address the NCR's.

Verification frequencies shall follow the requirements of DB §112, Appendix C112C – Attachment 1 for standard materials and methods adhering to Department specifications. The verification methods and frequencies for unique products shall be as determined by the Department on a project by project basis.

4.9 NON-CONFORMANCE

The Design-Builder's QC staff and QC Engineer are responsible for identifying non-conforming work. The Department may also identify non-conforming work to the Design-Builder for corrective action. Any completed work not meeting the plans, specifications and contract requirements is to be deemed non-conforming. A Non-Conformance Report (NCR) must detail the area of problem and cite from plans or specifications, how or why the work does not conform. The NCR will be submitted to the CQCE in writing within 24 hours of identification. Outstanding reports will be discussed in a review of the NCR log at weekly meetings. The Department will verify that all NCR's are addressed in a timely manner per the QC Plan. The resolution of a NCR may potentially include removal and replacement, reworking, or repair.

The Department's CQAE can raise a NCR (see DB §105-4) when he/she identifies material, or a finished product in which the material is used, is not in conformity with the Design Plans and Project Specifications. Contract Requirements. With respect to Verification Sampling and Testing NCR's, in accordance with DB §112-4.43, the Design-Builder's QC Engineer, is required to evaluate and assess the material in question and provide the Department with a written explanation why the non-conformance occurred, what corrective action is being put in place to avoid future non-conformances, and information regarding a clearly defendable plan for disposition (using good engineering judgment) of the existing non-conforming material which may potentially include removal and replacement, reworking or repair. Where reasonably acceptable work has been produced, the Department's Project Manager can make a determination if the work may remain in place, and in such an event is required to document the basis of his/her determination (see DB §105-4). As such any determination should only be made where the Design-Builder's written explanation documents sufficient engineering judgment to support the case for the work to remain in place.
It is important that both the Design-Builder and the Department’s staff fully appreciate the reasons for raising NCRs—a NCR. Often there is reluctance on the Design-Builder’s part, perhaps as a result of normal human reluctance to admit error, or previous experience on other contracts where a misinformed or negative managerial attitude was taken towards NCRs. The Department’s Project Manager should actively encourage the issue of NCRs and point out, to the Design-Builder’s team the benefits, from a cost and time point of view, of reacting openly to non-conformance reporting in accordance with the process outlined above, in order to minimize the need to remove and replace works (see DB §105-4).

4.9.1 Non-Conformance Log

The Design Builder shall maintain a log for reported non-conformance materials or procedures according to the requirements of DB §113-2.13 § 111-18.2 and DB § 112-2.1.

4.9.2 Engineering Judgment

Material test results or workmanship that are in reasonable conformance with specifications and project requirements, but do not meet the specification requirements specifically, may be adequate for their intended use. As such, where, based on sound engineering judgment, reasonably acceptable work has been produced, the Design-Builder may choose to leave the work in place as is. Such determination must provide for the material or work to perform as originally intended. The Department’s Project Manager can make a determination if the work may remain in place, and in such an event is required to document the basis of his/her determination (see DB §105-4). Each such occurrence must be properly documented and a project log of engineering judgments maintained by the Project Manager. Documentation shall include the location, specification requirement, recorded test results or observed procedures non-conformance, and the engineering judgment applied to deem the situation suitable for incorporation into the project.

4.10 INDEPENDENT ASSURANCE SAMPLING AND TESTING

The Independent Assurance Sampling and Testing (IAST) program as implemented by NYSDOT, or its designee, to evaluate all sampling and testing procedures, personnel, equipment, and laboratories that will be used as part of the acceptance decision. This program provides uniform procedures to verify that tests are performed by qualified personnel and that laboratory facilities and equipment are adequate to perform the required sampling and testing methods. DB §112-3.2 provides the various requirements of the program.

With most Design-Build projects, the pace of construction is extremely quick. Manpower curves are normally established to bring construction inspectors and testing technicians to the project at optimal periods based on the volume of anticipated work. Careful administration of the IAST program is essential to the success of the overall project so that unnecessary delays are not encountered and testing technicians and laboratories are evaluated in a timely manner.

Implementation of the IAST Program is performed by Regional NYSDOT personnel; however, NYSDOT has the option of designating an independent laboratory to administer the IAST program on its behalf. When this option is utilized, personnel from the independent laboratory must be qualified to meet NYSDOT requirements.
SECTION 5  DISPUTE RESOLUTION

Non-conformance of observed practices are usually easily discernible, such as the size and spacing of reinforcing steel. Through the life of a project, there may be differences in material test results or statistical sample populations between the Design-Builder’s QC and the Department.

In an effort to be as efficient and timely as possible, it is recommended that the Design-Builder, QC Engineer, Department’s Project Manager and CQAE develop a plan to resolve disputes as near to the operational level as possible. Time limits can be established for how long an agreement can be worked out at a particular level before it should be addressed at the next level. Time critical disputes may, however, ascend to the highest level within a day.

If a discrepancy in the test results occurs, a cooperative effort by the Department and the Design-Builder to identify the cause of the non-specification material or the discrepancy in the test results will include the following actions:

- Check of test data, calculations and results;
- Observation of the Design-Builder’s sampling and testing by the Department’s Project Manager; and
- Check of test equipment by the CQAE.

Since most QA sampling and testing will be progressed using Regional laboratories, the first level of sample testing for dispute resolution will be performed at the Department's Central Laboratory, or utilizing an independent laboratory when specific test capabilities do not exist within the Department. If resolution cannot be made at this level then a referee laboratory will be used as specified in DB §112-4.

5.1  NON-VALIDATION AND STATUS OF MATERIALS

It is important for the reader to understand that for RF-1 verification process to have a positive outcome, the material test results must first be within specification limits, and secondly the statistical comparison of QC and QA test results must validate. For discrepancies where evaluation uses RF-1 with statistical verification methods, dispute resolution needs to consider if the material actually fails to meet contract specification limits or if the statistical comparison does not validate. When QA verification test do not statistically validate the Design Builder’s QC test results, NYSDOT the Department and the Design Builder’s CQCE shall jointly investigate the source of non-validation. If the non-validation persists over five consecutive RF-1 F- and t-test analyses, a Non-Conformance Report shall be issued to formally document and seek resolution to the non-validation. In addition to the need to investigate the non-validation, the material in question has to be immediately evaluated to determine if it can be left in place or has to be removed, reworked, or repaired. If material is to remain incorporated into the Project, the material in question will be evaluated using the process described in this section. The appropriate party (CQAE or CQCE) may exercise Engineering Judgment to determine that the material will perform its intended purpose.

For RF-1 defined materials requiring statistical verification, the Department will perform continuous F- and t-test analysis with the testing frequency as defined in DB §112, Appendix C.112C – Attachment 1. The continuous analysis will be run daily with new verification test
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results being added to the sample population as older verification test results are removed (up to 25 day maximum limit). The analysis will be performed against the corresponding QC sample population.

The level of significance ($\alpha$) used for statistical analysis will be as provided below unless otherwise approved by the Department.

<table>
<thead>
<tr>
<th>Material</th>
<th>Level Of Significance ($\alpha$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthwork: compaction</td>
<td>0.01</td>
</tr>
<tr>
<td>Concrete, structural: air content, 28 day compressive strength</td>
<td>0.025</td>
</tr>
<tr>
<td>Concrete, non structural 28 day compressive strength</td>
<td>0.01</td>
</tr>
<tr>
<td>Hot Mix Asphalt items</td>
<td>Per existing QC/QA program</td>
</tr>
<tr>
<td>Other materials (TBD)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

There are four possible combinations of passing and failing results between the QC and QA (verification) test results.

1. Both the QC and QA test results pass specification limits: Although statistical validation has not occurred, both the QC and QA test results are passing the established specification limits; thus, material quality in question is considered acceptable.

2. QC test results fail and QA test results pass specification limits: Material may be left in place if the QC Engineer determines that engineering judgment may be used to accept the material or if the material is accepted through the non-conformance resolution process.

3. Both the QC and QA test results fail the specification limits: Material may be left in place if the QC Engineer determines that engineering judgment may be used to accept the material or if the material is accepted through the non-conformance resolution process. The acceptance of material is subject to one of the two scenarios below.
   a. QA test result indicates reasonable conformance with specification requirements, and NYSDOT exercises engineering judgment to concur with acceptance of material based on the QC Engineer’s judgment or through the non-conformance resolution process.
   b. QA test result does not indicate reasonable conformance with specification requirement, and the QC Engineer must perform an additional fixed test at the QA failed test location. Based on the results of QC Engineer test result and subsequent investigation discussions between the Department and the Design-Builder, a determination is made and documented on whether the material may be left in place.

4. QC test results pass but QA test results fail specification limits: Material may be left in place if the QC Engineer determines that engineering judgment may be used to accept the material or if the material is accepted through the non-conformance resolution process. This is subject to NYSDOT the Department’s response in the two scenarios below.
   a. QA test result indicates reasonable conformance with specification requirements, and NYSDOT the Department exercises engineering judgment to concur with acceptance of
material based on the QC Engineer’s judgment or through the non-conformance resolution process.

b. QA test result does not indicate reasonable conformance with specification requirement, and the QC Engineer must perform an additional fixed test at the QA failed test location. Based on the results of QC Engineer test result and subsequent investigation discussions between NYSDOT the Department and the Design-Builder, a determination is made and documented on whether the material may be left in place.

## 5.2 SPLIT SAMPLE DISCREPANCIES

For dispute resolution where non-statistical methods are being used, a split sample shall be obtained and tested. Since most QA sampling and testing will be facilitated at the Regional level, sample testing for dispute resolution will be performed at the Department’s Central Laboratory or utilizing an independent laboratory. A comparison of tolerances which will trigger the referee and disputes processes is summarized in the table below. Comparison tolerance for testing shall be:

The Department’s Project Manager will determine allowable actions to address discrepancies or failures as determined below, following the non-conformance resolution process. Actions could consist of but are not limited to remove and replace, remediate in place, remain in place without remediation, and/or consideration of price adjustments.

<table>
<thead>
<tr>
<th>Test</th>
<th>Comparison Tolerance</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil/Aggregate Wet Density using Nuclear gauge in Direct Transmission¹</td>
<td>Soil – 2.1 pcf Aggregate Base – 3.0 pcf</td>
<td>Values adjusted from AASHTO T-310</td>
</tr>
<tr>
<td>Soil/Aggregate Density using Sand Cone¹</td>
<td>2.0 pcf</td>
<td>Values adjusted from ASTM D1556</td>
</tr>
<tr>
<td>Soil/Aggregate Moisture using Nuclear gauge (backscatter)²</td>
<td>Soil – 2.1 pcf</td>
<td>Values adjusted from AASHTO T-310</td>
</tr>
<tr>
<td>Soil/Aggregate Moisture determined by oven dry</td>
<td>14% difference²</td>
<td>ASTM D2216</td>
</tr>
<tr>
<td>One Point Proctor – density</td>
<td>5.0 pcf</td>
<td>AASHTO T-99</td>
</tr>
<tr>
<td>One Point Proctor – moisture</td>
<td>15% difference²</td>
<td>AASHTO T-99</td>
</tr>
<tr>
<td>Gradation</td>
<td>&gt; No. 4 sieve: ± 5% ≤ No. 4 sieve: ± 3%</td>
<td>AASHTO T27 / T/11</td>
</tr>
<tr>
<td>Concrete Air</td>
<td>± 1%</td>
<td>ASTM C231 ASTM C173</td>
</tr>
<tr>
<td>Concrete Strength</td>
<td>15 % difference on the average of 2 cylinders</td>
<td>Values adjusted from ASTM C39</td>
</tr>
<tr>
<td>Asphalt Bulk Specific Gravity Identical plug/core</td>
<td>Less than 0.015 Less than 0.030</td>
<td>Values adjusted from AASHTO T-166</td>
</tr>
<tr>
<td>Plug/core –split sample (close proximity)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Referee testing in the field using a third party

Percent difference calculation shall be $\% \text{ diff} \leq \left( \frac{\text{absolute value}[W1-W2]}{(1/2) \times (W1+W2)} \right) \times 100$
SECTION 6  PROJECT SPECIFIC QUALITY ASSURANCE PLAN

As mentioned in the introduction of this Guide, the contents of this Program Guide are generic in nature and should be applicable to all types and sizes of Design–Build Projects. It is the Project Manager and the CQAE and DQAE responsibility to apply this program guidance at the Project Level. Once the Design Builders Quality Control Plan is approved and designs are progressed to a point where estimated quantities can be determined, then the Project Staff can begin to customize the Project level Quality Plan.
The Design Builder (DB) shall use the following Appendix 112C – Attachment 1 to aid in development of a Quality Control (QC) Plan as defined in DB Section 113. The Department will perform progress Quality Assurance (QA) for materials acceptance to verify that the Design and Construction QC Plan is controlling DB operations in conformance with Department standards. This Appendix 112C – Attachment 1 describes the expected testing procedures and frequencies to assure product and process quality, and verification of the DB QC Plan.

Quality Assurance on the Design Builder’s QC process may be progressed according to values defined in the “QA Actions and Testing Frequencies” column of the following table. The Risk Factor for various items will determine the frequency at which the Department will conduct quality assurance / verification sampling and testing. Statistical methods may be considered for use by the Department to evaluate the effectiveness of sampling and testing results from QC for use as acceptance. The QA Actions and Testing Frequencies column defines those actions and the frequency thereof that the Department expects to minimally take to provide quality assurance of materials and construction inspection activities. Final determination of these actions and frequencies will be developed specific to the QC plan provided by the DB.

The level of effort of verification by the Department both for materials and construction practices is dependent on risk. The Design–Builder assumes most of the risk and progresses work accordingly. This risk is managed by providing appropriate QC to limit failures of materials or non-conformance to acceptable construction procedures. Therefore, the Department’s role is to verify materials acceptability and testing results, assure compliance with construction procedure requirements, and perform IAST to assure testing is performed correctly.

The Department’s QA considers the material application and construction procedures to determine the overall risk associated with using a particular material or process. The risk is then defined as one of three Risk Factor levels, each addressing the expected QA needs. Detailed description of each Risk Factor level is defined in the table below and specific details for each item’s QA practices are provided. The three Risk Factor levels are described in general below.

Risk Factor 1 (RF-1)

RF-1 provides continuous analysis using statistically based (F & t-testing) for those categories of materials and associated test methods that are strong indicators of long-term performance. These are typically considered high-risk, high-volume type materials incorporated into a Design–Build project. Examples include compressive strength for hydraulic or Portland Cement Concrete, percent soil compaction for embankment, and percent asphalt content for Hot Mix Asphalt Concrete. The Design–Builder’s QC testing frequency is in compliance with various Department documents and the Department’s Verification sampling and testing frequencies should be a minimum of 25% of the QC testing frequency. Acceptance is based upon both validation of statistical analysis of complimentary QC test data population and QA verification test data populations and both test results meeting acceptable material acceptance limits as defined in the contract documents.

- Repeat failing test results should trigger a higher frequency of Verification testing and for those materials/test methods that have demonstrated high levels of repeated successful validation/specification compliance should be considered for reduced frequency of inspection not to go below 10% of QC testing frequency.
- When smaller quantities of high risk type materials are used, consideration for random sampling and test, independent from Design-Builder sampling and testing, may be appropriate at 25% of the QC testing frequency. Statistical comparison and/or validation methods may not be appropriate in these situations.

Risk Factor 2 (RF-2)

In addition to checking that all QC test results are within specification limits, RF-2 verification provides independent verification of those materials and associated test methods that are secondary indicators of material performance. Verification testing, in the form of independent verification sampling or split sampling with the QC test, that the test results fall within specification limits is typically appropriate. These materials/material tests are considered a reduced risk from RF-1. An example is the slump test for concrete. Approved list products that require more than manufacturer’s certification of compliance to assure quality are covered under this level of verification. The QA verification sampling and testing frequency should be a minimum of 10% of QC testing frequency. Acceptance is based upon verification test method results meeting the specification limits. No statistical validation is required.

Risk Factor 3 (RF-3)

RF-3 provides observation verification for those materials that only require very few QA tests for compliance with various Department documents or where materials are accepted based on the inclusion in the Departments Approved List of materials. For these materials, risk of failure does not affect the long-term performance of the facility produced approved products are used. The Design-Builder is should still perform QC testing as required. Under RF-3 approach, the Department oversight does not perform any tests but observes any QC test performance for equipment and procedural compliance for a product, and/or perform an audit of project procurement records to verify compliance with Departments Approved List, Certification of Compliance on record, Buy America, etc. The frequency of this testing is a minimum of once per calendar year per test method and/or product, or random frequency as determined by the Department’s Project Manager.

Some domestic off-site materials sampling and testing for QA operations may be performed by the Department as indicated elsewhere in the RFP. When Department QA is used for acceptance/rejection of materials, the Risk Factors are not applicable since no Design-Builder data is used for acceptance. The Design-Builder may perform QC as deemed appropriate or desired at off site locations and should include any such oversight in the QC Plan. If Design-Builder sampling and testing is desired for acceptance, this should be outlined in the QC Plan and Risk Factors will apply.

Use of materials for which there is not an Approved List category will require, in the Design-Builder Quality Control Plan, those tests and evaluations to prove the durability of unique materials before use in the project. In many cases, physical testing should be performed by an independent laboratory. A planned frequency of sampling and testing, commensurate with the level of risk of the product proposed for use, must be provided in the DB Quality Control Plan for acceptance by the Department’s Project Manager.

Department QA of Construction Inspection operations will typically consist of verifying the CQCEM is performing and assuring all construction operations adhere to Department Specifications and Standards and/or the DB Quality Control Plan. The Department shall have the authority to perform sufficient inspections and/or tests of the DBs work to verify that the inspections and/or tests performed by the
CQAE4 are in compliance with the contract, the design and specifications, the Design-Builders's approved Quality Control Plan, as well as the Department’s standards and practices. The frequency of construction inspection will depend on the critical nature of the construction operation.

Certain critical items of work will require witness or hold points to assure acceptability and/or verification testing prior to progression of work. The DB should include in the QC Plan specific hold points as desired by the DB or as required by the Department.

Witness and Hold Points shall be established where notification of the Department and/or Design-Builders’s design team (for elements of a project that require design team members certification prior to continuation of Work), where applicable, is required for observing or visually examining a specific work operation or test. Witness Points are points identified within the Construction QC Plan which require notification of the Department and/or design team, where applicable. Work may proceed beyond a Witness Point with or without participation by the Department provided proper notification has been given. However, work shall not proceed until certification from the required design team member is obtained. Hold Points are mandatory verification points identified within the Construction QC Plan beyond which work cannot proceed until mandatory verification is performed. Witness and Hold Points shall be identified in the Construction QC Plan where critical characteristics are to be measured and maintained, and at points where it is nearly impossible to determine the adequacy of either materials or workmanship once work proceeds past this point.

The CQAEM shall designate a primary point of contact for notifications for inspection at Hold Points and Witness Points. An alternate individual may be designated to function in this capacity in his/her absence. For Witness and Hold points where the Department’s involvement is required, the Department’s CQAE4 will be designated to handle responses to the Concessionaire/Design-Builders with written reports or releases. The time necessary to respond to the notification for inspection at Witness and Hold Points shall be stated in the Construction QC Plan, mutually agreed to by both the Design-Builders and the Department.

The Department will have access to all activities and records of the DB, CQCM, and materials testing firm/laboratory retained by the DB for the purpose of assuring that the construction and inspection activities are being conducted in compliance with the contract, the design and specifications, the DB’s approved Quality Control Plan, as well as the Department’s standards and practices.

All QA activities of the Department will provide assurance that materials and methods are such that, when final acceptance of the project is requested, the Department is confident that all materials and work conforms to plans, specifications, and standards. These verifications will document the acceptance of the work for payment purposes and assure all non-conformances have been satisfactorily addressed.

The Department shall have the authority to stop work specific to Work Zone Traffic Control non-conformance issues that impact safety of the traveling public. The DB shall ensure the overall safety for the workers, the inspection staff and the public at all times.

Nothing in the scope of the Department’s QA role shall be construed to relieve the DB contractor and their CI and QC firms of their responsibilities for full time construction inspection and compliance with the contract, the design and specifications, the Design-Builders’s approved Quality Control Plan, as well as the Department’s standards and practices.
Tolerances for Statistical and Comparison evaluations shall be per the below tables to be deemed valid or acceptable. Any discrepancies shall be handled according to the **DB Appendix 112C**, Quality Assurance Plan Program Guide, Section 5.

The level of significance ($\alpha$) used for statistical analysis will be as provided below unless otherwise approved by the Department.

<table>
<thead>
<tr>
<th>Material</th>
<th>Level- Of Significance ($\alpha$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthwork: compaction</td>
<td>0.01</td>
</tr>
<tr>
<td>Concrete, structural: air content, 28 day compressive strength</td>
<td>0.025</td>
</tr>
<tr>
<td>Concrete, non structural: 28 day compressive strength</td>
<td>0.01</td>
</tr>
<tr>
<td>Hot Mix Asphalt items</td>
<td>Per existing QC/QA program</td>
</tr>
<tr>
<td>Other materials (TBD)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Comparison tolerance for testing shall be:

**Split Sample Comparison Tolerances**

<table>
<thead>
<tr>
<th>Test</th>
<th>Comparison Tolerance</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil/Aggregate Wet Density using Nuclear gauge in Direct Transmission</td>
<td>Soil – 2.1 pcf</td>
<td>Values adjusted from AASHTO T-310</td>
</tr>
<tr>
<td></td>
<td>Subbase – 3.0 pcf</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aggregate Base – 3.0 pcf</td>
<td></td>
</tr>
<tr>
<td>Soil/Aggregate Density using Sand Cone</td>
<td>2.0 pcf</td>
<td>Values adjusted from ASTM D1556</td>
</tr>
<tr>
<td>Soil/Aggregate Moisture using Nuclear gauge (backscatter)</td>
<td>Soil – 2.1 pcf</td>
<td>Values adjusted from AASHTO T-310</td>
</tr>
<tr>
<td></td>
<td>Subbase – 3.0 pcf</td>
<td></td>
</tr>
<tr>
<td>Soil/Aggregate Moisture determined by oven dry</td>
<td>14% difference*</td>
<td>ASTM D2216</td>
</tr>
<tr>
<td>One Point Proctor – density</td>
<td>4.5 pcf</td>
<td>AASHTO T-99</td>
</tr>
<tr>
<td>Lab Proctor – density</td>
<td>4.5 pcf</td>
<td></td>
</tr>
<tr>
<td>One Point Proctor - moisture</td>
<td>15% difference*</td>
<td>AASHTO T-99</td>
</tr>
<tr>
<td>Concrete Air</td>
<td>+/- 1%</td>
<td>ASTM C231</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ASTM C173</td>
</tr>
<tr>
<td>Concrete Strength</td>
<td>15 % difference on the average of 2 cylinders</td>
<td>Values adjusted from ASTM C39</td>
</tr>
<tr>
<td>Asphalt Bulk Specific Gravity</td>
<td>Less than 0.015</td>
<td>Values adjusted from AASHTO T-166</td>
</tr>
<tr>
<td>Identical plug/core</td>
<td>Less than 0.030</td>
<td></td>
</tr>
<tr>
<td>Plug/core –split sample (close proximity)</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Percent difference calculation shall be $\% \text{ diff} \leq (\|\text{absolute value}[W1-W2]\| / ((1/2) \* (W1+W2)))*100$
compliance issues; prepare and present concise, logical oral and written reports; interpret and apply applicable laws, policies, regulations and procedures; and establish and maintain cooperative working relationships with the prime contractor community, DBEs and DBE associations, and local community based organizations.

J) **Risk Manager:** Should have demonstrated experience in bridge design and major infrastructure construction with at least 10 years experience in risk management activities, including preparation and implementation of Risk Management Plans, Risk Registers, and procedures for managing, mitigating and avoiding risks. The Risk Manager should hold only this Key Personnel position. The Risk Manager preferably should have a certificate of completion of training in Risk Management from an accredited educational institution, or membership in the Institute of Risk Management or similar professional risk management organization.

K) **Foundations Lead Designer:** Shall be licensed as a Professional Engineer in the State of New York and should have demonstrated at least 15 years experience in foundation design, including deep foundations, high capacity foundations, seismic design of drilled shafts and piles, and bridge foundations.

L) **Lead Demolition Engineer:** Shall be licensed as a Professional Engineer in the State of New York and shall have demonstrated at least 15 years experience in the development and execution of erection and demolition plans. Experience related to sequenced unloading of bridges is particularly valuable.

M) **Bridge (Approaches & Connectors) Lead Designer:** Shall be licensed as a Professional Engineer in the State of New York and shall have demonstrated at least 15 years experience in bridge design, including steel and concrete superstructures, continuous multi-span bridges, and curved bridges. Experience shall include at least one (1) project having a construction value in excess of $30,000,000.

N) **Lead Civil Engineer:** Shall be licensed and currently registered as a Professional Engineer in the State of New York and shall have at least 15 years experience in civil roadway design, including Work Zone Traffic Control. NYSDOT experience is preferred. Experience shall include at least one (1) project having a construction value in excess of $30,000,000.

O) **Seismic Specialist:** The Design-Builder shall provide a Seismic Specialist who shall be a qualified Professional Engineer licensed in the State of New York. The seismic specialist shall have a minimum of 15 years practicing earthquake engineering. The seismic specialist shall have a background in both structural and geotechnical disciplines. The prior project experience of the Seismic Specialist shall include at a minimum: ground motion evaluation, spatial variability, and soil structure interaction effects, liquefaction analyses, evaluation of pile demonstration programs and derivation of soil-pile parameters, finite element modeling of complete soil-pile-structure interaction including pile-to-pile interaction and kinematic effects.
• Plans showing the locations where a) soil was removed from the site, b) locations where soil excavated from the project site was reused on the project site (if any), and c) the locations where imported fill is placed.

3.2.6 Environmental Plans

3.2.6.1 Environmental Compliance Plan

The Design-Builder shall further develop the Initial Environmental Compliance Plan submitted with its Proposal, implement the Plan and update it as necessary throughout the duration of the Project. The Environmental Compliance Plan shall detail the Design-Builder’s measures and procedures to ensure compliance with all EPCs, as well as compliance with all other Environmental Requirements.

A fully developed version of the Environmental Compliance Plan shall be submitted prior to the start of construction for consultation and written comment by the Department.

At a minimum, the Environmental Compliance Plan shall include the following elements:

A) Environmental team
   1) Environmental personnel: names, titles and Project responsibilities, training, years of relevant experience, licensing and applicable training; and
   2) Environmental team organization.

B) Environmental compliance tracking and reporting procedures
   1) Process meetings and reporting requirements, including purpose and frequency of reports;
   2) Environmental compliance schedule;
   3) Method of reporting emergencies and alleged violations of Environmental Requirements to the Department of; and
   4) QA/QC procedures for environmental compliance; and

C) Environmental Approvals
   1) Identify any increase in environmental impacts associated with the Design-Builder’s design that are greater than those disclosed in the Project environmental permits or other Environmental Requirements. Identify all additional permits and Environmental Approvals required for implementation of the Design-Builder’s design; and
   2) Describe the Design-Builder’s plan to obtain all additional permits and Environmental Approvals identified and how they fit into the Design-Builder’s schedule.

D) Mitigation and Monitoring
   1) Explain how the Proposer will integrate environmental compliance into the construction activities in the Creek and manage their mitigation and monitoring.
   2) Identify the mitigation plans that the Proposer will implement for environmentally sensitive aspects of the Work.
3.2.6.2 Other Environmental Plans

The Design-Builder shall be responsible for preparing the following documents, and all other required documents, in conformity with all Environmental Requirements. In each of the documents listed below, the Design-Builder shall identify the frequency of submission of compliance reports to the Department.

A) Spill Prevention, Control, and Countermeasures (SPCC) Plan;
B) Construction Noise Control Plan;
C) Rodent Control Plan;
D) Lead Compliance Plan;
E) Stormwater Pollution Prevention Plan (SWPPP) (Draft provided by the Department, the Design Builder is responsible for updating as necessary, obtaining final approval and implementing);
F) Project-Generated Waste Management Plan;

3.3 ENVIRONMENTAL APPROVALS

The Environmental Approvals required for the Project as it is scoped in the RFP as well as the current status are listed in Table 3.4-1. This list may not be comprehensive and the Design-Builder is responsible to obtain all approvals as needed for the Project.

Updates to the status of Environmental Approvals will be provided by the Department by Addenda.

<table>
<thead>
<tr>
<th>Issuing Agency</th>
<th>Permit/Process/Approval</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Coast Guard</td>
<td>General Bridge Act of 1946 33CFR 525: bridge permit.</td>
<td>Permit has been issued by USCG.</td>
</tr>
<tr>
<td>USACE</td>
<td>Permit authorization will meet the requirements of Section 404 of the Clean Water Act (33 USC 1251-1387) and Section 10 of the Rivers and Harbors Act of 1899. Anticipate authorization under Nationwide Permit No. 15 US Coast Guard Approved Bridges</td>
<td>Permit application submitted on 8/20/12. Permit application acknowledged by the USACE on 1/4/13. <strong>Issuance of US Coast Guard Permit confirmed Nationwide Permit 15 is applicable. No further permit from USACE required.</strong></td>
</tr>
<tr>
<td>Issuing Agency</td>
<td>Permit/Process/Approval</td>
<td>Status</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>USFWS</td>
<td>Endangered Species Act (ESA) (16 USC §§1531-1544; 50 CFR Part 402)</td>
<td>Per the 5/22/02 and 1/24/05 correspondence between NYSDOT and USFWS, except for transient individuals, no known federally listed threatened or endangered species are known to exist in the project area.</td>
</tr>
<tr>
<td>Fish and Wildlife Coordination Act (FWCA)</td>
<td>FWCA recommendation issued in 5/15/07 letter from NOAA to NYSDOT.</td>
<td></td>
</tr>
<tr>
<td>NOAA – NMFS</td>
<td>Endangered Species Act (16 USC §§1531-544; 50 CFR Part 402)</td>
<td>NOAA letter dated 8/18/2005 states that no federally listed threatened or endangered species are present at the project site and no further consultation under Section 7 of the Endangered Species Act is necessary (page IV-79 of the EIS)</td>
</tr>
<tr>
<td>NYSDEC</td>
<td>Tidal Wetlands Law (ECL, Article 25)</td>
<td>Permit has been issued by NYSDEC. <a href="#">Permit Modification issued by NYSDEC November 12, 2013</a></td>
</tr>
<tr>
<td></td>
<td>The Protection of Water (ECL, Article 15)</td>
<td>Permit has been issued by NYSDEC. <a href="#">Permit Modification issued by NYSDEC November 12, 2013</a></td>
</tr>
<tr>
<td></td>
<td>Excavation and fill in navigable waters</td>
<td>Permit has been issued by NYSDEC</td>
</tr>
<tr>
<td></td>
<td>Section 401 of the Clean Water Act Water Quality Certification</td>
<td>Permit has been issued by NYSDEC. <a href="#">Permit Modification issued by NYSDEC November 12, 2013</a></td>
</tr>
</tbody>
</table>
SECTION 4 GENERAL PROJECT SCOPE OF WORK

4.1 SCOPE

The Design-Builder shall perform all Work necessary to prepare the Project site for construction, perform the required construction, maintain the site in suitable condition during all stages of construction and provide cleanup and restoration of the construction site and all disturbed areas. The major items of the Project Scope of Work are identified in Section 1.3.

4.2 STANDARDS AND REFERENCES

The Design-Builder shall perform the Work in accordance with the applicable Standards, Codes and Manuals cited in Section 1.5, unless otherwise stipulated in this Project Requirement.

4.3 REQUIREMENTS

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

The site work shall 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, standpipes, 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 pave all disturbed areas to match the existing surrounding ground elevation. All lots that have been acquired in Fee by the Department shall be paved as well as all vacant areas under the new Eastbound Approaches, Eastbound Main Span and Queens Connector. For the Base Project Plus the Option, the area under the new Westbound Main Span shall also be paved. The area under the future Westbound Approach spans shall not be paved. The Design-Builder shall pave all disturbed areas with three (3) inches of Asphalt Top and Binder Course on three (3) inches of Asphalt Base Course with Twelve (12) inches of Sub-base. 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.

For minor structures, including buildings and sheds not covered by Project Requirement 23 – Demolition of Buildings, the Design-Builder shall remove and properly dispose of all objects encountered as part of or within the structures, buildings and/or sheds, including hazardous and regulated materials, foundations and underground tanks.
components on the existing bridge and the proposed bridge structures. When the electricity supply to the existing bridge is discontinued, and with prior approval of the Department, the Design-Builder shall remove from the Project site any extraneous electrical supply components that are not needed for operation of the proposed lighting or future ITS systems.

The Department has submitted a request to Con Edison for 480V a.c. power to be provided to the bridge near the intersections of Gardner Avenue and Cherry Street in Brooklyn and 56th Road and Laurel Hill Boulevard in Queens.

Power requirements other than street lighting such as aesthetic lighting, elevators, navigation and obstruction lighting, etc. shall be powered and metered by a Con Edison feed separate from the feed for the NYCDOT roadway lighting.

The power distribution equipment including provisions for throw over should be located on the bridge in a location that can be accessed by maintenance forces on the deck.
Additional corrosion protection (beyond the 1/8 inch) shall be provided at foundation locations that exceed the values in Table 10.3.2. Additional corrosion protection measures may include:

1) Allowance for additional sacrificial metal loss

2) Barrier coating such as coal tar epoxy and/or cathodic protection

The bottom of drilled shafts shall be inspected using a shaft inspection device (SID) in accordance with NYSDOT Specification. Uplift resistance of the drilled shaft shall be taken as the minimum of either the side shear resistance of the drilled shaft rock socket or the shear wedge capacity of the surrounding rock.

The lateral resistance of a single drilled shaft and a group of shafts shall be analyzed for all limit states. Group efficiency and lateral load reduction factors shall be considered based on the shaft spacing as specified in the AASHTO LRFD Specifications. Center-to-center spacing between adjacent drilled shafts shall not be less than 2.5 times the diameter of the drilled shafts.

**Drilled shafts through the Raritan Clay layer shall be installed using a double-casing to prevent introduction of contaminants into deeper zones of the aquifer**

For drilled shaft foundations, include the following information in the Foundation Design Report:

1) Nominal Axial Compressive Resistance and resistance factors
2) Factored Axial Compressive Resistance
3) Nominal Uplift Resistance and resistance factors
4) Factored Uplift Resistance
5) Top of Drilled Shaft elevation
6) Top of Rock Socket Elevation
7) Tip of Drilled Shaft Elevation
8) Drilled Shaft Diameter
9) Rock Socket Diameter and depth
10) Reinforcement Cage cross sections
11) Concrete and reinforcement steel properties
hasp. All locks on the bridge be keyed alike. Provide an access opening through all interior
diaphragms of any box sections. If the bottom of the diaphragm access opening is not flush with
the bottom flange, provide concrete ramps to facilitate equipment movement. Indicate on plans
that diaphragm access openings are to remain clear and are not to be used for utilities or other
attachments. If utilities are required, provide additional areas or openings.

11.3.3.3 Substructure Interior Access Considerations

Access to the interior of voided piers shall be provided at the top of the piers. Safety Platform
and Ladder System, including fall protection system shall be provided for inspection and
maintenance access for substructure. Hatches shall be provided at the top that provide direct
access to the interior of superstructure box sections.

Elevators that provide maintenance access within the tower legs shall be provided from the
tower base to the elevation of the cable anchorages. A minimum of one elevator shall be
provided in each tower. The elevator shall conform to the requirements for Industrial Elevator in
accordance with the New York City Building Code and shall be have a minimum interior clear
space of 5\(\frac{3}{4}\) feet by 6\(\frac{4}{4}\) feet in plan. All elevator machinery, cables, and electrical components
shall be readily accessible with work platforms, hatches, and ladders necessary to perform
routine inspections and maintenance. The elevator shall be provided with emergency lighting.
All electrical components shall be U.L. listed for the application, and comply with NEC
workspace clearances. Cables and raceways shall comply with NEC requirements for the
application. The installation shall include all structures, clamps, bolts, hangers, drive
mechanisms, control devices and safety devices as required for the operation of the elevators
and shall be in compliance with ASME A17.1, A17.2, and A17.3 and all local codes and
ordinances. Megger test cables before putting them into service. Test results shall become
part of the Inspection and Maintenance Manual for reference. The elevators shall be inspected
and maintained by qualified service personnel. Maintenance shall be performed per the
manufacturer’s recommendations and inspections shall be at durations as required by the New
York City regulations. These requirements will be outlined in the Inspection and Maintenance
Manual.

Access ladders shall be provided from the top of the elevators to the top of the towers. Secure
access doors shall be provided at the tower base, tower top and at either the roadway or at the
maintenance travelers. All areas where access is provided shall have OSHA compliant fall
protection (railings, etc.).

11.3.3.4 Conceptual Design Report

The Design-Builder shall submit a conceptual design report for all the Eastbound and
Westbound Main Span, Approach, Connector, Viaduct and Interchange structures for the
Department’s review and written response. The Conceptual Design Report shall include, as a
minimum, the following:

A) Overview plan, including tasks;
B) General plan and elevation;
C) Typical cross sections for the various structures that compose the bridge;
SECTION 14 LIGHTING

14.1 SCOPE
The Design-Builder shall conduct all Work necessary to provide all lighting located inside the Project Limits. This includes the transportation related permanent and temporary roadway lighting of the bridge, under-deck lighting at street crossings, maintenance lighting, navigation and aviation lights, aesthetic lighting and lighting of local streets.

The Design-Builder shall be responsible for the replacement of existing street lighting and traffic signals on existing at-grade streets to be reconstructed with full depth pavement in order to realign or reestablish that street.

14.2 STANDARDS AND REFERENCES
The Design-Builder shall perform the lighting activities in accordance with the Contract Requirements and the applicable New York City and New York State Standards, Codes and Manuals listed in Section 1.5 Requirements. The lighting design and construction will require review and approval from the New York City Department of Transportation Bureau of Street Lighting. All roadway lighting shall be designed and constructed per the NYCDOT Bureau of Street Lighting Standards.

Additional reference is made to:

- FHWA Lighting Handbook

In addition to the documents referenced above, the IESNA has published two technical memorandums that solely address light trespass and sky glow.

- TM-11-00, Light Trespass: Research, Results and Recommendations/Illuminating Engineering Society of North America, 2000 (TM-11-00)
- TM-10-00, Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in conjunction with Roadway Lighting, Illuminating Engineering Society of North America, 2000 (TM-11-00)
- MLO, Model Lighting Ordinance, Illuminating Engineering Society of North America and the International Dark Sky Association

These additional criteria documents provide recommendations for measuring, determining, and identifying light trespass and sky glow for roadway and aesthetic lighting. These documents shall be used to determine whether light trespass mitigation devices, such as shields, will be required. The Contractor shall submit an analysis report detailing light trespass and sky glow, as well the size and calculated effectiveness of any shielding recommended.

The criteria referenced for the design of the aesthetic lighting can be found in:


The particular tables to be used are:
• 4.1 Recommended Illuminance Targets;
• 22.4 Indoor and Nighttime Outdoor Activity Level Definitions
• 26.2 Exterior Illuminance Recommendations
• 26.4 Nighttime Outdoor Lighting Zone Definitions.

14.3 REQUIREMENTS

All roadway, street, and pedestrian path lighting shall meet the values for illumination, luminance, and veiling luminance ratio listed in Table 3-5a of the AASHTO Roadway Lighting Design Guide and the NYCDOT Bureau of Street Lighting Standards.

The Design-Builder shall employ a professional lighting and electrical engineer (s) who has completed at least two bridge lighting projects to the satisfaction of the Department. This electrical engineer shall be licensed in the State of New York and have a minimum of 10 years of experience in roadway and bridge lighting design.

The Design-Builder shall employ a structural engineer for the design of the light poles and anchorages. This structural engineer shall be licensed in the State of New York and have at least ten years experience in roadway and bridge lighting design.

14.3.1 General

The Design-Builder shall be responsible for designing, furnishing, and installing everything required for the implementation of the lighting system for the Project, including new luminaires, controls, traffic signals, poles, mounting, wiring, conduits, support hardware, containment, installation, programming, focusing, commissioning, and as-built information necessary for delivering a complete and functional system. The Design-Builder shall be responsible for ensuring that the system meets the following requirements:

A) Provides illumination such that the road surface illumination meets or exceeds the uniformity and the illuminance and/or luminance criteria during darkness;
B) Utilizes energy efficient and long-life, low maintenance lighting technologies that have been reviewed and accepted by the Department;
C) Provides aesthetic architectural lighting scheme during darkness;
D) Lighting fixtures, poles, and supports shall be accessible for inspection and maintenance by the maintaining agency(s), and their maintenance equipment shall be verified as suitable by the Design-Builder;
E) Minimizes avian/bird impacts as outlined in the Kosciuszko Bridge Project Reevaluation Statement, January 2011;
F) Meets U.S. Coast Guard navigational requirements for Newtown Creek including the shipping channel;
G) Provides aviation warning to meet Federal Aviation Administration (FAA) requirements during daylight and darkness;
H) Utilizes a photo-control switch system that automatically activates lighting before dusk and deactivates the system past dawn. In addition, independent control of the roadway, pedestrian, and aesthetic lighting shall be included, in order to reduce power consumption and allow manual control of lighting;

I) Provides inspection lighting for all enclosed areas such as pier, towers and box girders;

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

K) Uses lighting fixtures that meet 2G vibration resistance per ANSI C136.31-2010, and light poles that include damping devices to insure that the fixtures are not damaged nor have their life shortened by bridge vibration;

L) Provides IEC 60529-IP65 fixtures that are water tight and intended for a marine/industrial environment; and

M) The roadway and bikeway/walkway lighting shall be readily available luminaries and not proprietary equipment.

The Design-Builder shall coordinate with the Department and NYCDOT to ensure the appropriate design methods, procedures, submittals, plan preparation, analysis methodology, review and comment processes, approval procedures, specifications and construction requirements are met.

A complete lighting analysis of the roadway lighting including all aesthetic lighting to include veiling luminance calculations shall be submitted by the Design-Builder for approval to the New York City Department of Transportation Bureau of Street Lighting.

14.3.2 Bikeway/Walkway Lighting

The Design-Builder shall ensure that the lighting installation at the bikeway/walkway shall:

A) Provide permanent lighting on the entire length of the bikeway/walkway, both on and off the Bridge that meets AASHTO and NYCDOT Bureau of Street Lighting Standards.

14.3.3 Power Supply Requirements

Electrical power supply requirements are further defined in Project Requirements 9 – Utilities. For reference, the lighting installation shall:

A) Meet all requirements of the latest 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.

14.3.4 Interior Inspection Lighting

All enclosed areas subject to regularly scheduled inspection and maintenance shall be provided with a low voltage (120 V a.c.) inspection and maintenance lighting system, and electrical outlets. Power distribution for these systems may be up to 480V a.c. with local step-down transformers and distribution panels.
The lighting levels shall be 30 foot candles horizontal. Bulbs for interior lighting system shall be high-endurance bulbs and fixtures shall be impact resistant. The system wiring shall be sized so that voltage drop shall not be more than 5%. All system transformers, distribution panels, and conductors shall be megger tested and meet NETA-ATS insulation resistance requirements before putting them into service. Test results documentation shall become part of the Operation and Maintenance Manual for reference. Installation shall meet all requirements of the latest edition of the National Electric Code (NEC) and local ordinances.

Electrical receptacles shall be provided and be 120V a.c. GFCI duplex receptacles, in powder coated cast steel or iron outlet boxes at 50 feet maximum on centers. Each receptacle shall have a weather-protective gasketed outdoor cover. The load for the last receptacle of every circuit run shall be a minimum of 12 amps.

Switches shall be mounted at each end of each span and at each access door. Twelve hour reset timers with key-lockable override switches shall be provided for each circuit to turn off lighting system automatically.

Do not use conductor size larger than an AWG No. 4.

14.3.5 Aesthetic Lighting

Aesthetic lighting fixtures used shall be accessible for inspection and maintenance by the maintaining agency(s), and their maintenance equipment shall be verified as suitable by the Design-Builder. Aesthetic lighting fixtures shall be IEC 60529-IP65 rated, shall be water tight, and marine grade.

The aesthetic lighting scheme shall at a minimum illuminate all of the main span and back span stay cables as well as all faces of the main span towers full height, i.e. from the top of the tower footings to the top of the towers. Aesthetic lighting shall also be provided along the length of the main span and back span edge girders. The lighting scheme shall minimize avian/bird impacts in accordance with the Kosciuszko Bridge Project Reevaluation Statement, January 2011 and utilize LED fixtures to the maximum extent feasible. The Design-Builder shall avoid spot lighting and use optically controlled luminaires along with a dimming/control system to limit the effect of lighting on migratory birds and other wildlife. The Design-Builder shall provide control of the aesthetic lighting circuits allowing all or portions of the lighting to be turned off during migration periods. Remote access of the lighting controls from the traffic control center shall be provided using the ITS network.

Aesthetic lighting shall pose no veiling luminance to roadway or navigable channel users as defined by IES-RP8.

14.3.6 Navigation Lights & Aviation Beacons

The Design-Builder shall design, furnish and install navigation and aviation lighting systems for the Main Span Bridge over Newtown Creek. The system shall be suitable for marine environment.

The installations, equipment, materials and workmanship shall be in accordance with the applicable provisions of the National Electrical Code, the United States Coast Guard Bridge
14.3.8 Roadway Signage
The requirements for roadway signage are further defined in Project Requirement 13 –Signing Pavement Marking and Signals. No signage installed as part of the Project requires sign lighting.

14.3.9 Relocation of Existing Equipment
All existing lighting luminaires and associated equipment on utility poles to be relocated shall be relocated to the proposed utility poles. Any existing equipment damaged by the Design-Builder during the progress of the Work shall be replaced at no additional cost to the Department.

14.4 DESIGN REQUIREMENTS

14.4.1 Existing Inventory
The Design-Builder shall be responsible for the production of an inventory including a map and list, of as-built locations of all existing lighting, illuminated signals and related cabling and controls within the Project Limits and such features located beyond the Project Limits that may be impacted by the Project.

14.4.2 Lighting and Electrical Design Plans
The Design-Builder shall develop lighting and electrical plans for the Project that shall:
A) Provide for all components as called for in this Project Requirement;
B) Meet the Visual Quality Requirements of Section 18; and
C) Provide a complete visual representation of the lighting design.

14.5 CONSTRUCTION REQUIREMENTS

14.5.1 General
The Design-Builder shall use materials pre-approved for use by the NYCDOT for roadway and street lighting and by the Department, for aesthetic lighting fixtures shall be submitted to the Department for review and approval.
The Design-Builder shall provide lighting materials that:
A) Are new at the time of installation;
B) Meet the visual and aesthetics goals for the Project;
C) Are long life, with a minimum L70 rating of 50,000 hours per IES Standards, and are energy efficient;
D) Are compatible with the electrical characteristics (including voltage, number of phases, number of wires) of the power supply available at the Project site;
The Design-Builder shall produce a clear graphical representation of the staging with each stage, with associated traffic clearly delineated, in linear chronological order. Each significant change in traffic patterns shall be presented separately.

The Design-Builder shall be responsible for updating the construction staging plan as necessary throughout the Contract, so that at all times the current version reflects the planned current and future construction staging activities.

The Design-Builder shall provide portable variable message signs for the posting of appropriate warnings and advisories at strategic locations where opportunities are available for directing traffic to alternative routes in response to prevailing circumstances. It is anticipated that portable variable message signs will be required at major highway interchanges, local streets and any detour routes.

The Design-Builder shall be responsible for maintaining access to all businesses, residences, and properties within and abutting the Project, including essential services such as trash pickup and mail delivery. If the Design-Builder’s WZTC plan includes a single lane cattle chute on the mainline BQE, the Design-Builder shall have a heavy duty tow truck on site from 6am to 11 pm each day the cattle chute carries traffic.

NYSDOT’s Construction Quality Assurance Engineer (CQAE) and the Design-Builder shall coordinate with any municipality or agency affected by any detours or road closures that are part of the WZTC. Comments from those municipalities or agencies shall be incorporated by the Design-Builder into the site’s WZTC plan as directed by the CQCE.

NYSDOT’s CQAE shall be contacted by the Design Builder 2 weeks in advance of any proposed closure or staging.

16.3.2 Draft Lane Closure Stipulations

The lane closure stipulations are currently under review by the OCMC. The current Draft stipulations are located on the Project website as well as the draft Detour Plans. Approval is subject to the submittal of permit applications by the Design Builder to the OCMC. The Design-Builder is required to submit WZTC proposals including final detour plans for approval before closures.

The Design-Builder shall assume seven (7) Traffic Enforcement Agents for each ramp closure and four (4) Traffic Enforcement Agents for each local street closure. The Design-Builder shall assume a rate of $31 per hour for each Traffic Enforcement Agent required.

Liquidated Damages will be assessed for lane closures that extend beyond the hours permitted by OCMC per the Part 5 Special Provisions – Liquidated Damages.

16.3.3 Opening of New Lanes or Shared Use Path

Any new travel lanes, turn lanes, shared use path or other feature shall not be open to traffic prior to complete installation of all associated overhead and ground mounted permanent signs and striping.

16.4 DELIVERABLES

At a minimum, the deliverables shall include the items listed in Table 16.4-1 for the Department’s consultation and written comment.
SECTION 21 RAILROAD

21.1 SCOPE

The Main Span of the bridge crosses over the Long Island Rail Road (LIRR) tracks on the Queens side of Newtown Creek. At this location the railroad consists of two operational tracks and a track siding. The tracks are owned by LIRR and operated by New York and Atlantic Railway also operates on these tracks.

This Project Requirement provides requirements for Works affecting the railroad, in addition to requirements in Part 2 – DB § 102.6. The Design-Builder shall be responsible for the design and implementation of any and all works affecting the railroad. Anticipated work affecting the railroad includes but is not limited to:

A) Demolition of existing bridge above and adjacent to the railroad;
B) Installation of the new drainage system under the railroad;
C) Construction of new bridge piers adjacent to the railroad; and
D) Construction of new bridge superstructure above the railroad.

21.2 STANDARDS

The Design-Builder shall perform all activities in accordance with the Contract Requirements and the applicable Standards, Codes and Manuals listed in Section 1.5 unless otherwise stipulated in this Project Requirement.

21.3 SPECIFICATIONS AND PROTOCOLS

The Design-Builder shall note that this project requires close coordination with the LIRR and the New York and Atlantic Railway Company. It is anticipated that the railroad(s) will provide their own personnel to perform flagging services while certain project operations take place adjacent to, over or under the railways’ tracks, facilities, rights-of-way and property. The flag person(s) must be present, as determined prior to the start of construction, to insure the safe operation of trains, prevent the delay of trains and insure the safety of all property and personnel on the project site.

The Design-Builder shall coordinate and schedule his construction activities with the railways’ project engineer(s) no later than 60 days prior to the start of the work, in consultation with the Design Builder and the Department, so that a workable schedule can be formulated and agreed upon.

The Design-Builder’s attention is directed to Part 2 – DB § 102.6 Section 105-09, Work Affecting Railroads, in the Department’s Standard Specifications.
The Design-Builder shall perform the railroad activities in accordance with AREMA Manual for Railway Engineering and the Railroad Agreement and requirements in Part 7 – Contract Documents.

21.4 REQUIREMENTS

The Design-Builder shall be responsible for coordinating design and construction activities in relation to LIRR Railroad facilities that may be affected by the Works. This shall include but not be limited to addressing the follow issues where applicable:

A) Design criteria and requirements relating to construction on railroad property and for facilities affecting railroad operations;
B) Investigations to be conducted on railroad property;
C) Treatment of railroad-related or owned utilities;
D) Railroad procedures and schedule for design and construction approval;
E) Conditions under which construction on railroad property may start prior to completion of design;
F) Railroad design reviews and construction inspections;
G) Time periods during which field and construction activities can occur, including designated construction windows;
H) Operational constraints and requirements for field and construction activities, including flagging responsibility and costs; and
I) Payments to railroad.

21.4.1 Design

The Design-Builder shall design all permanent and temporary works to be outside the kinetic envelopes of the tracks based on NYSDOT, AREMA and the LIRR and New York and Atlantic Railway requirements. The Design-Builder shall be responsible for obtaining railroad-specific design information, along with schedule information, through liaison and discussion with the LIRR and New York and Atlantic Railway as necessary.

Horizontal shields shall be designed for 100 psf uniform vertical load throughout plus a 2000 pound concentrated vertical load applied to produce maximum stresses. For stringer or deck design, the 2000 pound concentrated load may be assumed to act over a maximum area of 2’x2’. Vertical shields & barriers shall be designed for 30 psf uniform horizontal load acting on all vertical surfaces.

21.4.2 Construction

All permanent and temporary works shall be constructed outside the kinetic envelopes of the tracks based on NYSDOT, AREMA and the LIRR and New York and Atlantic Railway requirements.
Table 24.3-4 – Design Criteria for Bikeway/Walkway

<table>
<thead>
<tr>
<th>Critical Design Element</th>
<th>Standard</th>
<th>Reference¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design Speed</td>
<td>20 mph min.</td>
<td>HDM 17 &amp; 18, AASHTO</td>
</tr>
<tr>
<td>2 Shared Use Width</td>
<td>20'-0&quot;</td>
<td>Project Specific</td>
</tr>
<tr>
<td>3 Grade</td>
<td>5% max.</td>
<td>HDM 17 &amp; 18, AASHTO, ADAAG</td>
</tr>
<tr>
<td>4 Cross Slope</td>
<td>2% max, 1% desirable</td>
<td>HDM 18, ADAAG</td>
</tr>
<tr>
<td>5 Horizontal Clearance</td>
<td>2 ft min., 3 ft recommended</td>
<td>HDM 17, AASHTO</td>
</tr>
<tr>
<td>6 Vertical Clearance</td>
<td>8 ft</td>
<td>HDM 17, AASHTO</td>
</tr>
<tr>
<td>7 Sight Distance for bicyclists.</td>
<td>15 mph</td>
<td>AASHTO Guide</td>
</tr>
</tbody>
</table>

¹ NYSDOT Highway Design Manual (HDM) Chapters 17 and 18, the AASHTO Guide for the Development of Bicycle Facilities (AASHTO), and the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) were used as references. The proposed bikeway/walkway facility shall be ADA-accessible.

The bikeway/walkway shall be 20 feet wide along its length from Van Dam Street in Brooklyn to 54th Avenue in Queens. The Design-Builder shall refer to the NYSDOT Highway Design Manual and AASHTO “Guide for the Development of Bicycle Facilities” for required width east of 54th Avenue.

The new Pedestrian Ramp at Laurel Hill Boulevard shall be design and constructed per the requirements of the NYSDOT Highway Design Manual.

At the 43rd Street / LIE underpass the bikeway/walkway width shall meet the existing sidewalk width at the underpass location.

The bikeway/walkway must be ADA compliant.
4.2 MATERIAL

4.2.1 STRAND

Strand for cables shall be 0.6 inch diameter uncoated seven wire strand conforming to the requirements of ASTM A416, grade 270, $F'_{y} = 0.9 f'_{s}$, weldless grade, low-relaxation strand. The strand shall be a greased and sheathed strand in accordance with the specifications set forth herein.

Galvanized strand may be permitted provided it meets or exceeds the requirements of ASTM A416 as well as the requirements of Section 8 of the PTI recommendations.

During the process of manufacture of individual wires for "weldless" strand, welding is permitted only prior to or at the site of the last thermal treatment of the rod, for example, patenting or controlled cooling. There shall be no welds in the wire after it has been drawn through the first die in the wire drawing process.

The Design-Builder shall require the strand supplier to furnish to the Department for review and evaluation, complete mill test reports and certificates for the strand from each heat, including stress-strain curves and modulus of elasticity.

Greased and Sheathed Strand

A. Strand shall be furnished by the supplier in coils and shall have padded contact areas, wherever possible. Each coil shall be protected by a manufacturer approved method to ensure a uniformly coated strand having no adhering foreign matter or damage to the sheathing, including that from ultraviolet exposure. The ends of the strand shall be sealed to prevent intrusion of moisture into the annular space between the individual wires. No welds or joints shall be present in the finished strand.

B. Upon delivery to the cable fabricator, the strand shall be properly stored in a weatherproof building to prevent corrosion. Each coil shall be marked with the order number, coil number and heat number. The starting end of each coil shall also be marked. When uncoiled, the strand shall lay straight with a maximum deviation not exceeding 4 inch off set from a theoretical centerline in any 6 feet of length. Sharp kinks or short radius bends (less than the reel radius) shall be cause for rejection.

Stay Cable Pipe Sheathing

A. Cable sheathing for each parallel strand cable shall be high density polyethylene plastic pipe (HDPE) of light color (coextrusion method) conforming to ASTM F714 and to section 3.5.3 of the PTI recommendations.

B. The maximum allowable ratio of outside diameter of the HDPE pipe to the minimum wall thickness shall be 32.

C. The required length of the HDPE pipe shall be obtained by continuous extrusion or by fusion welding. Fusion welding of the HDPE shall be performed in accordance with ASTM D2657.

D. The manufacturer of the proposed cable sheathing shall certify that the construction procedure utilized by the Design-Builder shall not result in any damage to the cable sheathing.

E. Procedures for packaging, handling and shipping the pipe shall ensure the pipe will not be damaged when delivered at the fabricator's plant and/or the job site. A certificate of analysis shall be furnished for each shipment of pipe stating the material supplied meets
this specification and showing results of tests.

F. Verification tests may be performed by the Department on each size of pipe used. Samples for verification testing will consist of one 6-foot length of pipe per size and thickness per 3000 feet. Additionally, the fabricator shall submit samples to qualify the fusion welding procedure and these samples shall consist of three (3) 6-foot lengths of pipe per pipe size thickness.

G. Sheathing of individual strands in greased and sheathed strands shall be in accordance with the requirements of PTI Recommendations Section 3.3.

Stay Cable-Anchorages

A. Stay cable anchorages shall meet the acceptance criteria as specified in the PTI recommendations and elsewhere in these Special Provisions (Section 8). The Design-Builder shall submit to the Department for review and evaluation design calculations for the cable anchorages.

B. The cable anchorages used for the full scale cable testing shall be fully instrumented and monitored during the total test program in order to verify the design and performance of the cable system.

C. The stay cable anchorage system shall consist of a wedge type or wedge socket type. The Design-Builder shall furnish all material specifications to the Department for review and evaluation. Each component of the assembly shall have an AASHTO or ASTM material and test designation number.

D. The anchorage system shall provide approximately a minimum of five percent additional holes in each anchor head for contingency. The approximately minimum of five percent additional holes requirement applies to each stay cable and cannot be grouped group of 3 adjacent stays. These additional holes shall be positively sealed, to protect the stay cable interior from the elements, using approved plugs that can resist any stresses that may be imposed on it.

E. The anchorage assembly and components shall be protected at all times against corrosion. Corrosion protection measures shall be shown on the shop drawings. The system shall include a steel cap to protect the exposed anchor plate and wedges from corrosion. The steel cap shall be galvanized in accordance with AASHTO M-111. Prior to the installation of the cap, the anchor plate and exposed strand shall be coated with a suitable grease.

F. All other components such as bearing plates, keeper plates, recess tubes, steel flanges, socket bearing flanges, wedges, rubber gaskets, o-rings, etc. shall be of suitable type and sufficient strength suitable for the intended use. The supplier of the stay cable system shall submit to the Department for review and evaluation material specifications, calculations and detail drawings for the sizes, types and materials for such components.

G. Shop drawings shall be submitted to the Department for review and evaluation showing all dimensions, materials and operations for fabrication of the anchorage assembly. Detailed procedures for installing all socket assembly components, insertion of the strands, installation of wedges, stressing and grouting the assembly shall be developed and submitted to the Department for review. Complete shop drawings with supporting calculations shall be submitted showing all equipment (jack, stressing chairs, etc.) and procedures required for stay cable force adjustments and for complete detensioning.

H. Review and evaluation by the Department of the various submissions made by the Design-Builder does not relieve the Design-Builder from the responsibility for the accuracy and adequacy of the work.

I. No approval will be given to any portion of the stay anchorage assembly or procedures until all required submittals are made and found acceptable by the Engineer of Record.
SP 21. SELF PERFORMANCE SPECIALTY ITEMS

The following specialty items will be excluded from the total Contract Price for the purpose of calculating the required 51% Prime/DB self work requirement.

- Pavement Markings
- Sampling and laboratory analysis of soil for disposal parameters
- Removal and disposal of asbestos containing material
- Structural Steel Painting
- Landscaping items
- Television Inspection and Video Recording of Sewers
- Building Condition Survey
- Vibration Monitoring
- ITS Equipment
- Elevators
- Travelers
- Archeological monitoring/reporting
- Electrical / power / lighting
- Overlays
- Signs/sign structures
- Stay cable installation
- Material Testing
- Quality Control Inspection
- Design/Erection Engineering
- Wind tunnel testing
- Rail shipping/railroad flagging
- Special Fills (i.e. Styrofoam Block fill and other light weight fills)
- Stone and brick work
- Specialty Lighting (for cables and tower)
- Temporary Structures
ENGINEERING DATA

- Acquisition Maps
- Acquisition Plans
- Additional Railroad Requirements
- Archaeological Area of Potential Effect
- Archaeological Work Plan
- Construction Protection Plan for Old Calvary Cemetery
- Draft Asbestos Assessment and Design Report (Buildings)
- Draft OCMC Permit Stipulations and Detour Plans
- Draft Construction Health and Safety Plan
- Draft Contaminant Management Plan
- NYSDEC Laurel Hill Site Capping Plan Approval
- NYSDEC Permit Modification
- NYSDEC SPDES Discharge Permit
- NYSDEC Tidal Wetlands, Protection of Waters, and Water Quality Certification Permit
- Stormwater Pollution Prevention Plan (SWPPP)
- FAA Determination
- FAA Determination Extension Brooklyn and Queens Tower
- Laurel Hill Site Management Plan
- LIRR Requirements
- NEPA Record of Decision
- NYSDEC Coastal Consistency Certification
- Railroad Agreement
- Reevaluation Statement
- SPDES Public Participation Plan
- USACE - NYSDEC Joint Permit Application
- USCG Bridge Permit
- USCG Record of Decision
- Viewpoint Locations