CASHLESS TOLLING

DESIGN-BUILD PROJECT

TA 19-1, Contract No. D800002

Request for Proposals

Addendum #2

March 22, 2019

Modification to the Request for Proposals

CASHLESS TOLLING

Design-Build Project

TA 19-1, Contract No. D800002

Note to Proposers

Differences between the deleted pages and the revised pages have been identified as follows:

- Brackets have been inserted on the left-hand margin of the pages to indicate where changes have been made to the documents; and
- Text additions have been shown in underlined red font and text deletions have been shown in crossed out red font.

General Instructions

Delete the Instructions to Proposers, Appendix C, Technical Proposal Submittal Requirements in its entirety, and replace with the attached Instructions to Proposers, Appendix C, Technical Proposal Submittal Requirements. Please note, there are only tracked changes on Page C-5 but the footer has been updated on all pages.

Delete the Page containing the list of Forms in the Instructions to Proposers, Appendix E, Forms. Add the attached Kapsch Checklist and ORT Checklist.
Please note, Form AAP-10 has been revised in the Editable Forms – 2-15-19 directory.

Delete Pages 36, 37, 46, 53, 82, 91 through 98, 100 through 102, 104, 113, 114, 122, 126, 134, 138, 139, 141, 156, 157, 163 through 167 of the DB Contract Documents, Part 3, Project Requirements and substitute the attached revised Pages 36, 37, 46, 53, 82, 91 through 98, 100 through 102, 104, 113, 114, 122, 126, 134, 138, 139, 141, 156, 157, 163 through 167. Please note, there are no tracked changes on Pages 36, 93 through 96, 102 and 157, but the page is included due to the shift of text resulting from the additions to Pages 37, 91, 92, 100, 101 and 156.

Delete Part 5 – Special Provisions in its entirety and replace with the attached Part 5 – Special Provisions. Please note, there are no tracked changes on any of the pages but the footer has been updated on all pages.

Delete Drawings Interchange 23 Concept and Int 44 - Canandaigua, Victor of the DB Contract Documents, Part 6 – RFP Plans – Indicative/Concept Plans and replace with the attached revised Drawings Interchange 23 Concept and Int 44 - Canandaigua, Victor.

Note to Design Build Proposers, the following changes have been made to Final RFP Part 7 – Engineering Data since Amendment #1 was posted on March 12, 2019:

Part 7 Section 5 – Terminus Concept Plans: Revised Williamsville Terminus Location and Lackawanna Terminus Location – 3/22/19

Part 7 Section 6 – Asbestos and Hazardous Materials: Renamed Hazardous Material Reports for 56, 57, 57A, 58, 59, 60 – 3/22/19

Part 7 Section 6 – Asbestos and Hazardous Materials: Added Hazardous Material Reports (Testing not Final) for 35, 37, 38, 40, 41, 42, 43 and 48 - 3/22/19

Part 7, Section 18 – Existing & Proposed Conditions: Revised Proposed Conditions Table for Exit Ort – Revised Design Speed for B1 Post Road and B2 Taconic – 3/22/19

Part 7, Section 18 – Existing & Proposed Conditions: Revised Proposed Conditions Table for Interchanges and Terminus – Revised Design Speed for 25A Duanesburg, 45 Victor, and 47 LeRoy – 3/22/19

Delete the specification for Item 683.9805XX--25 Toll Facility Security System in the DB Contract Documents, Part 8 – Special Specifications and replace with the attached specification for Item 683.9805XX--25.

No other provision of the solicitation is otherwise changed or modified.

CASHLESS TOLLING

TA 19-1, Contract No. D800002

REQUEST FOR PROPOSALS

INSTRUCTIONS TO PROPOSERS

APPENDIX C
TECHNICAL PROPOSAL SUBMITTAL REQUIREMENTS

Addendum #2 March 22, 2019

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TABLE OF CONTENTS

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C1.0 GENERAL INSTRUCTIONS

This ITP Appendix C provides the general instructions and establishes the content and formatting requirements for the Technical Proposal, Volumes 2. Additional criteria is outlined in ITP Appendix A.

Each Proposer should submit the Technical Proposal required pursuant to this ITP Appendix C, organized, separated and labeled in accordance with the format in Table C.

The submittals should be limited to the page limitations (if any) specified in this ITP Appendix C. Each sheet shall be 8.5” by 11” and printed double sided, unless otherwise stated below. 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.

C2.0 DESIGN-BUILDER’S ORGANIZATION AND PROCESS

C2.1 KEY PERSONNEL

The Proposer shall include Form R – Summary Individual’s Experience for each of the Key Personnel identified in the ITP Appendix A, outlining his/her experience and qualifications.

The content of each Form R that should be filled in includes:

A) Proposed role on Project;

B) Relevant licenses, registrations and certifications;

C) Total years of professional experience and years of experience performing the work the individual would perform on this Project; Form R for Quality Manager should include an attached sheet that provides a description of experience in quality systems based on ISO 9001 if applicable;

D) Relevant past 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. Contact Information 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 proposed key personnel individual shall have performed the work duties being evaluated, in the past year.

E) Employment time with participant;

F) Percent time (percentage of working time) allocated/committed to this Project for each 12 month period of the Project from its NTP through project completion;

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

The Proposer should include Form KP in Volume 1 to communicate any approved changes in the Proposer’s proposed roster of Key Personnel, relative to the Proposer’s SOQ submission. For each change in Key Personnel since the SOQ, the Proposer should include in the Proposal with Form KP a copy of the written approval received from the Authority for such change (see ITP Section 1.15), details of such Key Personnel’s role and a completely filled in Form R of the substitute personnel. If no changes in Key Personnel have been requested since the SOQ, Proposers should use Form KP to state that there is no change relative to the SOQ, as those Key Personnel evaluated during the SOQs do not have to be resubmitted in the final proposal.

C2.2 OVERALL DESIGN-BUILD TEAM ORGANIZATION AND APPROACH TO QUAILITY

C2.2.1 Design-Build Organization Chart

The Proposer should include a narrative describing the organizational arrangements it intends to implement for quality, safety, design and construction to achieve the Project's goals. The organizational arrangements described should clearly identify responsibilities and reporting lines of staff, particularly relating to Key Personnel. The narrative should include a review of the Proposer's assessment of the roles that the Key Personnel shall take in the Proposer's organization.

The Proposer should provide 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 and construction Work and construction inspection work and any other personnel the Design-Builder considers critical or the Authority has required to be included in other parts of the RFP to the successful completion of the Project. The Proposer should describe the interrelationships and interfaces between each member of the Design-Builder's Team (e.g., design, design checks, shop drawing preparation and review, construction, construction Inspection, materials testing, quality management, etc.). (The information in the Organizational Chart shall indicate: name, title on Project, firm associated with (employed by), and the Key Personnel boxes shall be shaded in yellow. The Organization Chart should include a legend that identifies the different text colors, representing the different firms depicted in the Chart)

The Proposer should describe the interrelationships and interfaces between the Proposer's organization, third parties (including other agencies), utility owners, the public and other contractors working in the vicinity and impacted by the construction of the Project.

C2.2.2 Design-Build Team Communication Protocol

The Proposer shall provide a Design-Build Team Communication Protocol Graphic, that addresses communication internal to the Design-Build Team structure, by superimposing the proposed lines of communication over the Proposer's Design-Build Team Organization Chart. Communication arrows (one arrow or two arrows) should be used to show the lines of communication. All the requirements associated with the Design-Build Team Organization Chart should apply and the communication protocol arrows shall be pink color. In addition, communication with the Authority's Project Manager, the Design Quality Assurance Engineer, and the Construction Quality Assurance Engineer shall be indicated on the Communication Protocol Graphic using Orange arrows. Finally, the Proposer shall include, as a supplement to the Communication Protocol Graphic, a narrative clarifying and/or supplementing the Proposer's proposed communication protocol.

The Proposer should describe how the Proposer will communicate with the Authority's Project Manager, Construction Quality Assurance Engineer, the Design Quality Assurance Engineer and their staff and describe the integration of the design and construction efforts to achieve efficient progression of the work that is consistent across the state, and in conformance with the Project Requirements. The Proposer should also describe the means of reporting on and controlling progress of the work to the Authority and for Project control.

C2.2.3 Design-Build Quality Control Plan

The Proposer should include an Initial Quality Control Plan. The Initial Quality Control Plan should follow the format shown in DB §113, Appendix 113A, and describe the Proposer's proposed quality control program for the design Work, the QC program for the construction Work, and how

the design and construction activities performed by different entities will be coordinated to ensure consistency of quality. The Initial Quality Control Plan shall be considered an initial document for the purpose of conveying the overall approach of the Proposer regarding QC, and shall be expanded and/or amended prior to implementation on the Project. See Contract Document Part 2 - DB §113. The Quality Control Plan serves as a "living document" throughout the project and should require updating as the project progresses.

The Initial Quality Control Plan should include two, separate QC organization charts (on 11"x17" sheets) for the design Work and the construction Work, clearly defining to whom the QC staff shall report within the Proposer's organization.

The Initial Quality Control Plan **shall** describe the approximate number, roles and responsibilities of key QC personnel during each phase of the Project to ensure quality design and construction, and describe the inter-relationship and relative authority within the Proposer's organization of QC staff and design and construction staff and the interaction with Design and Construction QA Engineers. The Proposer **shall** also describe the proposed Construction Inspection staffing to be provided throughout construction.

C3.0 DESIGN-BUILD APPROACH TO THE PROJECT (TECHNICAL SOLUTIONS)

The Proposer should include a Technical Solutions submittal, as described in ITP Appendix A, which should include a Project Understanding, Design Approach, and a Construction Approach in accordance with ITP Appendix A, Section A12.1.2 and ITP Appendix C Sections C3.1, C3.2 and C3.3. The narratives and drawings described in C3.2.1 and C3.2.2, respectively should (i) provide an overview of the proposed design and construction concepts, (ii) describe the key features and any innovative aspects of the Proposer's design concepts.

The Technical Solutions submittal should represent a level of design sufficient to enable a thorough evaluation of the Proposer's design concepts, should address all elements of the proposed design and construction and should be consistent with the requirements of the Contract Documents.

C3.1 PROJECT UNDERSTANDING

The Proposer should provide the following as part of their Understanding of the Project:

A) Identify and discuss three (3) critical risks for this Project in Priority Order, focusing on what the Proposer's team considers the most relevant and critical to the success of this Project in order to achieve the Project goals. Provide a narrative for each risk that:

   i. describes why the risk is critical;

   ii. indicates the impact the risk could have on the Project; and

   iii. discusses the mitigation strategies the Proposer's team shall implement to address the risk.

   iv. describe the role that the Proposer expects the Authority or other agencies may have in addressing these Project risks;

B) Briefly describe how the Proposer will use its organization and the Design-Build process to ensure the Project will meet the objectives as stated in the RFP, while considering the Authority's Project goals listed in Section ITP 1.2. The Proposal should describe as a minimum how the Proposer will manage the logistics of the design and construction of the

Project and describe how the firms and personnel will communicate and collaborate to deliver a quality Project.

C3.2 DESIGN-BUILD APPROACH TO DESIGN

C3.2.1 Design Narrative

Provide a narrative describing how the Proposer will apply the requirements of Contract Documents Part 3 - Project Requirements to the roadways and structures, while complying with any environmental and permitting requirements and other Contract requirements during the performance of the design and construction Work. The Proposer should provide a description of why particular aspects of the design were selected and the benefits of these design decisions, including the Proposer's selection of structure (Mainline Gantries and Mini-Gantries) types, the span lengths, foundation types, and materials and other items as specified in ITP, Appendix A, Section A12.1.2. A summary of any ATCs approved or conditionally approved by the Authority should be included.

A) Describe the proposed general arrangements and materials of the Mainline Gantries and Mini-Gantries and other elements of the Proposer's designs; why the Proposer is proposing the chosen general arrangements and materials; and how the Authority benefits from the Proposer's proposal; and

   i. Provide as part of the narrative the requirements described in ITP, Appendix A, Section A12.1.2.2

   ii. Provide copies of the Authority's approval letters for each ATC that is incorporated into the Proposer's Proposal along with a copy of each submitted ATC that was approved.

B) Describe the design method that will be used to determine foundation capacities;

C) Describe any Design Non-Conformances or aspects of the Design that do not conform to the Project Requirements and/or Standards listed in the RFP. Any Design Non-Conformances or designs that do not conform to the Project Requirements and/or Standards listed in the RFP, have not been approved by the Authority, and have not been described in the Proposer's Proposal will be rejected by the Authority after Contract Award.

C3.2.2 Design Drawings

Provide design drawings showing the plan view, typical cross section and elevation view as required to appropriately convey the scope of work and relevant information, with elements appropriately labeled and/or dimensioned.

The Drawings should include the following information:

A) Plans showing Work Zone Traffic Control for Toll Booth removal during, each construction stage to accomplish that as part of work at the following locations: Special Exit 17 (exit location), Interchange 24, Terminus location Williamsville, ORT Exit Sites; Exit 19, Exit 49, Exit 27 and Exit 20W;

B) Plans showing proposed alignment, lanes, shoulders, mini-gantry locations, barriers, delineators, railings and the reduction of foot prints for the ORT sites at the following locations: Exit 22, Exit 49, Exit B2, Exit 43;

C) Plans showing final alignment, proposed lanes, shoulders, barriers, railings with reduced pavement footprints at the following locations: Interchange 23, 24, 39 and 45;

D) Plans and Cross Sections of Roadway under the Mainline Gantry and final alignment for the Mainline Gantry locations and terminus locations.. The cross sections should show as a minimum: lanes, shoulders, railings, barriers, Communications Buildings and reduced footprints of the infrastructure at the following locations: between 23 (Boulevard) and 24 (Washington Avenue), between 39 (State Fair) and 40 (Westport), between 34 (Canastota) and 34A (Collamer) and at Terminus location Williamsville;

E) Plans, elevations and cross sections showing proposed configurations and dimensions of the primary structural elements of the Mainline Gantry structures, the means of accessing Cashless Tolling Equipment on the Mainline Gantries, and the Communication Buildings supporting the Cashless Tolling Systems at the following locations: between 23 (Boulevard) and 24 (Washington Avenue), between 39 (State Fair) and 40 (Westport), Terminus locations, Canaan, Ripley and Williamsville; For the ORT Exit Sites plans, elevations, and cross sections showing proposed configurations and dimensions of the primary structural elements of the mini-gantry structures, and to Communication Buildings supporting the Cashless Tolling Systems at the following: Exit 20W, Exit 31, Exit 49, and Exit 57. Table of minimum vertical clearances to be provided at the following mainline Gantry locations: between 23 (Boulevard) and 24 (Washington Avenue), between 25 (Interchange) and 25A (Duanesburg), between 39 (State Fair) and 40 (Westport) at Terminus locations Canaan, Williamsville, and Ripley for every lane in each direction. In addition include in the table of vertical clearances for the mini-gantries at the ORT Exit Sites: Exit 27, Exit 33, Exit 19, and Exit 43. Drawings may be used in combination with or in place of the table

C3.3 DESIGN BUILD CONSTRUCTION APPROACH (MEANS AND METHODS)

C3.3.1 Overall Construction Sequence of the Work

Provide a narrative describing the overall construction sequence of the Work in the Contract, including all staging areas, as well as the final permanent footprint of the constructed improvements. The narrative **shall** discuss the logistics and challenges of constructing the project elements while meeting the Work Zone Traffic Control requirements, and shall discuss why the sequence was chosen, how the sequence benefits the Authority, and why it is the best solution for constructing the project elements. The Narrative **shall** also discuss the requirements as stated under ITP, Appendix A, Section A12.1.2.3.

C3.3.2 Work Zone Traffic Control (WZTC)

Provide a narrative describing the proposed WZTC at the following~~each Gantry removals and~~ Toll Plaza~~s~~ removal sites; Interchange 23, Terminus location Lackawanna, ORT Exit Sites, Exit 20W, Exit 31, Exit 49, and Special Exit Newburgh (Exit 17 Exit only).~~to be demolished including~~ Include a description of the Proposer's plan to maintain safety and use of traffic control to minimize disruption to the travelling toll payers and minimize congestion, stemming from the construction work. At a minimum, the Work Zone Traffic Control narrative should:

A) Describe the major phases of the Work;

B) Include ~~complete typical sections by phase, including~~ information regarding maintenance of access and egress. ~~It should p~~Provide phase notes and details regarding sequence of work activities;

C) Identify each affected road and access way within the vicinity of the Project site, and describe the potential impacts, mitigation measures, limitations of use, and the number and duration of time that each road and maintenance access way may be impacted in performing the Work, including information regarding detours;

D) Describe the Proposer's approach to accommodate emergency service providers and commercial vehicles; and

E) Describe how the WZTC will be coordinated with adjacent projects to provide safe passage of traffic.

C3.3.3 Protection of Existing Facilities

Provide a narrative describing the proposed methods of protecting existing facilities, including a description of the specific means the Proposer intends to use to minimize impacts to existing utilities, local roads and properties adjacent to or within the Project Limits. This description should identify how the Proposer intends to mitigate impacts due to vibrations conditions and other effects of the Proposer's construction operations.

C3.3.4 Utility Work

Provide a narrative describing the proposed approach to the required Utility Work, including a description of how utility work will be approached with minimal disruptions to utility operations and other activities on the Project. Identify specific and/or unique design and/or construction methods that will be implemented to minimize the impacts on existing utilities and facilities as a result of construction activities. If no impacts, provide a declarative statement stating such.

C3.3.5 Drainage Modifications

Provide a narrative describing the proposed approach to any Drainage Modifications that will be required, including concepts for Stormwater management and connections to existing facilities and pipes. If no impacts, provide a declarative statement stating such.

C4.0 PROJECT SCHEDULE

C4.1 INITIAL BASELINE PROGRESS SCHEDULE (CPM)

The Proposer should include an Initial Baseline Progress Schedule that is comprised of a logic based, critical path method (CPM) project schedule for the Work to be performed from the execution of the Contract up to and including Final Acceptance. The Initial Baseline Progress Schedule should include a start date and the duration in days for all major Design and Construction activities, as well as a detailed work plan with a hierarchical breakdown of work scope by location, type and task.

The successful Proposer will be required to develop and complete a project schedule using Primavera P6 Enterprise software in conformance with Part 2, DB §100 – General Provisions and Part 5, Special Provision SP-3 – Critical Path Method Schedule within 10 calendar days, after award of the contract. The successful Proposer will be required to maintain the dates, durations and other milestones shown on the Initial Baseline Schedule when preparing the Primavera P6 Enterprise based schedule. See Contract Document Part 2 - DB §108 and Special Provision SP-3.

The Initial Baseline Progress Schedule should include the following information, at a minimum, for the overall project:

A) Notice to Proceed;

B) Design and design reviews;

C) Start of work at the project site(s);

D) Duration and dates of start and end for roadway closures, staging phases, and detours;

E) Dates for start and end of major design and construction activities, all Mainline Gantry work, Interchange Work, ORT Exist Site Work, and Special Exit Work;

F) AETC “go live” date; and

G) Final Completion date.

With the Initial Baseline Progress Schedule, the Proposer should provide a narrative that lists and describes the assumptions used in preparing the schedule, which should include the timing, duration and subject matter for the review and processing of all required submittals. The narrative should also include an explanation of the sequencing and phasing of construction activities and how the construction activities are planned to be performed based on different/multiple work shifts.

The Initial Baseline Progress Schedule should be provided in hard copy and electronically on thumbdrive. The schedule shall be presented in hard copy printed on 11” by 17” sheets with all as-printed font sizes at least 8 point. The electronic copy shall be in portable document format (pdf). The thumbdrive shall be labeled “Cashless Tolling, Project INITIAL BASELINE PROGRESS SCHEDULE, then the Proposer’s name. In addition, submit the electronic file in P6V8.2 format.

C4.2 SCHEDULE OF CONTRACT DURATIONS

The Proposer shall submit Form SCD.

C4.3 GANTT CHART

The Proposer should submit the Gantt Chart, supplied on Form G, which is a simplification of the Initial Baseline Progress Schedule showing all major construction activities. The Gantt Chart shall be presented in hard copy printed on an 11” by 17” sheets with all as-printed font sizes at least 8 point. For the purposes of this section, the following are examples of major construction activities (if applicable):

- Start of Construction
- All Mainline Gantry Work locations start and end dates; ;
- Interchange (11 locations) start and end dates; ;
- Toll Plaza Removal start and end dates;
- Toll Plaza demolition of each stage;
- ORT Exit site(s) start and end dates;
- All Special Exits start and end dates;
- Modifications of access to and from NYSTA Maintenance Facilities;
- Highway paving work for all locations start and end dates;
- Utility relocations and/or new installation work at applicable sites;
- AETC “go live” date;
- Overall Construction Project Completion.

C5.0 FORMAT OF VOLUME 2

Cashless Tolling

DESIGN-BUILDER'S PROPOSAL

VOLUME 2

TECHNICAL PROPOSAL

PROPOSER: _____

Organize Volume 2 in the format shown in Table C, with the cover of the volume labeled as follows:

Provide the Technical Proposal submittals in Volume 2 in the order set forth in Table C. Separate the individual submittals in Volume 2 with tabs labeled as outlined in Table C (e.g., "Design-Build Quality Control Plan"), and use a copy of the Table C as a checklist for the basis of the table of contents for Volume 2 (which shall be the first page of Volume 2).

Table C
Format of Volume 2

Proposal Component	Reference
Volume 2, Section A – Design-Build Organization and Process	
Volume 2, Section A1 – Key Personnel	
Key Personnel Form R	C2.1
Volume 2, Section A2 – Overall Design-Build Team Organization and Approach to Quality	
Design-Build Organization Chart (Narrative, Max 10 pages plus 11” x 17” org. chart)	C2.2.1
Design-Build Team Communication Protocol (Narrative, max. 10 pages plus 11” x 17” communication graphic)	C2.2.2
Design-Build Quality Control Plan (max. 15 narrative pages plus 2 org. charts)	C2.2.3
Volume 2, Section B – Design Build Approach to the Project (Technical Solutions)	
Volume 2, Section B1– Project Understanding	
Project Understanding (Narrative, max. 10 Pages)	C3.1
Volume 2, Section B2 – Design-Build Approach to Design	
Design Narrative (Narrative, max. 18 pages)	C3.2.1
Copies of Authority’s approval letters for each ATC that is incorporated into the Proposer’s Proposal along with each submitted ATC that was approved and used.	C3.2.1
Volume 2, Section B3 – Design Build Construction Approach (Means and Methods)	
Overall Project Construction Sequence (max. 15 pages)	C3.3.1
Work Zone Traffic Control (max.10 pages)	C3.3.2
Protection of Existing Facilities (max. 3 pages)	C3.3.3
Utility Work (max. 3 pages)	C3.3.4
Drainage Modifications (max. 3 pages)	C3.3.5
Volume 2, Attachment A – Design Drawings (separate 11” x 17” binder)	
Work Zone Traffic Control for Toll Plazas	C3.2.2A
Plans ORT Exit Sites (4 Sites)	C3.2.2B
Plans Interchanges (4 locations)	C3.2.2C
Plans Mainline Gantry Areas (3 sites) and Terminus locations (1 site)	C3.2.2D
Plan Designs of Mainline Gantry (2), Terminus locations (3), ORT Exit Sites (4) and Table of Vertical Clearances	C3.2.2E
Volume 2B, Attachment B – Project Schedule	
Initial Baseline Progress Schedule (max. 15 pages)	C4.1
Initial Baseline Progress Schedule Narrative (max. 10 pages)	C4.1
Form SCD – Schedule of Contract Durations	C4.2
Form G – Gantt Chart (max. 10 pages)	C4.3

Note: Volume 2, Attachment A – Design Drawings, shall be submitted in a separate 11” x 17” binder.

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APPENDIX E

Form Designator	Form Title
Proposal Form	
FP	Form of Proposal
FP(A)	Appendix to Form of Proposal
General Forms	
AAP-10	MWBE/SDVOB Solicitation Log
AR	Acknowledgement of Receipt of RFP, Addenda and Responses to Questions
ATC	Alternative Technical Concept Submittal Form
BDEA**	Bid Document Escrow Agreement
C	Proposer's Representative
CR	Commitment to Assign Identified Resources to Project
EEO	Equal Employment Opportunity Certification
G	Gantt Chart
KP	Key Personnel Information
L-3	Authorization to Provide Professional Services in New York State
LC	Lobbying Certificate
LLL	Disclosure of Lobbying Activities
LDB	List of Proposed MWBE/SDVOBs
LSI	Letter of Subcontract Intent
Kapsch	Kapsch Checklist
NC	Non-Collusion Affidavit
ORT	ORT Checklist
PAB**	Form of Payment Bond (Labor and Material Bond)
PEB**	Form of Faithful Performance Bond
R	Summary of Individual's Experience
RFC	Request for Change
SA*	Stipend Agreement
SCD	Schedule of Contract Durations
SDU	Schedule of Proposed MWBE/SDVOB Utilization
SWPPP	SWPPP Checklist
U	Conflict Questionnaire
Price Proposal Forms	
PP	Price Proposal Cover Sheet
SP	Schedule of Prices
WPS	Work Payment Schedule
PB	Proposal Bond

* Included for reference only. Form or Agreement to be submitted after Proposal Due Date

** Included for reference only. Form or Agreement to be submitted after Proposal Due Date by the selected Best Value Proposer

Mainline Gantry

Kapsch Pre-Installation Requirements

TA 19-1, D800002

Location:

Criteria	DB ✓	QA ✓	Kapsch ✓	Comments
Equipment Brackets (correct location, accessible)				
All Pull boxes properly installed				
Accessible stairs				
Treadle Frame installed with "dummy" treadles.				
Travel lanes striped in final alignment				
Shoulder pavement in final condition				
Shoulders/lanes not blocked				
Gantry conduit				
Treadle conduit				
Shoulder Fiber Strip Conduent pull box and conduit				
Communications Bldg (entrance pad)				
Communnications Permanent Power				
Communications secondary generator power				
Outlets operational				
Transfer switch				
Terminated fiber connectivity				
HVAC operational				
Vehicular access to Communications Bldg				
Parking area				
Interior of Communications Building Clean				

Title	Name	Signature	Date
Design-Builder Resident Engineer			
Quality Assurance Representative			
Kapsch Representative			

Instructions:

Resident Engineer → Quality Assurance Rep → Kapsch

Inspection Complete → Thruway Project Manager → Kapsch Notice to Proceed

ORT Pre-Installation Requirements

TA 19-1, D800002

Location:

Criteria	DB ✓	QA ✓	ITSM ✓	Comments
Treadle Frame				
Treadle & Cabling Installed				
Shoulder pavement in final condition				
Shoulder Treadle Strips & cabling installed				
Toll Zone travel lanes striped in final alignment and condition				
Loops installed				
Shoulders/lanes not blocked				
Permanent Positive Separation				
Communications Bldg - Permanent Power				
Communications Bldg secondary generator power				
HVAC operational				
Transfer switch				
Outlets operational				
Communications Building (entrance pad)				
Terminated fiber connectivity				
Equipment racks installed				
Cable trays installed				
Workbench Installed				
Interior of Communications Building Clean				
Vehicular access to Communications Bldg				
Parking area				
Grounded gantry				
Cameral mounts installed				
Camera illuminator mounts installed				
OSI Laser Scanner Mounted				
Conduit from Gantry to Communications Bldg				
All Cabling from Gantry to Communications Bldg				
Junction boxes installed				
4' service loop of all cables at junction box				
Antenna and cables with 6' service loop at the antenna side				
30' coil of all cables terminating in the Communications Bldg				
Cables tested				

Title	Name	Signature	Date
Design-Builder Resident Engineer			
Quality Assurance Representative			
Thruway ITSM Representative			

Instructions:

Resident Engineer

↓

Quality Assurance Rep

↓

ITSM

Inspection Complete

↓

Thruway Project Manager

↓

ITSM Notice to Proceed

3.3.6 Asbestos Containing and Hazardous Materials

An Asbestos and Hazardous Material Assessment of many existing tolling structures was performed by a NYS Department of Labor licensed firm using certified inspection staff. Asbestos Containing Materials (ACMs) identified during this screening/assessment were sampled and positively analyzed for asbestos content; suspect ACMs are presumed positive. Lead in paint and polychlorinated biphenyls (PCB) testing were also included in the scope of this study. While all existing tolling structures were not screened for ACMs, Lead and PCBs, it is expected that all unscreened tolling structures will have similar levels of ACMs, Lead and PCBs. The completed Asbestos Containing Material and Hazardous Materials Reports are located in Part 7 – Engineering Data, Section 6.

The Authority is performing Asbestos Screenings and Hazardous Material Assessments for all remaining unscreened existing tolling structures and remaining TUB facilities to be removed. As the locations are completed, the testing results shall be made available so the Proposers can properly identify costs for abatement and monitoring. The overall final reports will follow as completed. It is anticipated that all remaining sites will be completed by the Final Amendment deadline, however the testing results should be prior. The Design-Builder needs to constantly monitor Part 7 – Engineering Data, Section 6 for new screening data/reports. The Design-Builder shall be responsible for the abatement design, asbestos abatement, waste disposal and any required project monitoring/compliance air sampling during abatement of all confirmed and assumed asbestos containing materials if such materials will be disturbed during the performance of the Work. All asbestos abatement and waste disposal shall be performed in accordance with applicable safety and health codes and all applicable State and Federal regulations. See also DB Section 112-5.5, Asbestos.

The Design-Builder (in particular, the lead constructor on the Design-Build team) is also made aware that 12 NYCRR 56 specifically prohibits the abatement contractor from directly contracting project monitoring and/or compliance air monitoring services. In order to comply with this regulatory requirement, no Principal Participant may perform any asbestos abatement work for this Project. The Design-Builder shall subcontract asbestos abatement and project monitoring/compliance air sampling services to separate and independent firms.

If during the course of work, any asbestos-containing or hazardous materials not already documented in the asbestos and hazardous material assessments provided, or Project record plans, are encountered and require disturbance, the Design-Builder shall be responsible for any needed additional asbestos assessment, abatement design, asbestos abatement, waste disposal, and Project monitoring/compliance air sampling. The Design-Builder will also be responsible for the proper removal, handling, and disposal of any other un-documented hazardous materials. All additional work related to undocumented asbestos and hazardous materials shall be paid for under the Force Account pay item.

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

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

The Design Builder shall be responsible for the handling and disposal of all lead, PCB and hazardous materials in accordance with all applicable safety and health codes and all applicable State and Federal regulations.

3.3.7 Contaminated Materials

The project activities are generally limited to the existing highway and toll plaza areas. The proposed project will be constructed within the existing right-of-way. It is unlikely that subsurface hazardous or contaminated materials will be encountered.

If new subsurface hazardous or contaminated material is found then the additional material found shall be paid for under the Force Account pay item. All work shall be performed in accordance with all applicable safety and health codes and all applicable State and Federal regulations.

3.3.8 Cultural Resources

The Design-Builder shall be responsible for compliance with Section 14.09 of the NYS Historic Preservation Act. It is anticipated that all ground disturbing activities will take place in areas impacted by previous highway construction. With the exception of the Woodbury location, the Design-Builder should place any new gantries on the mainline 500 feet beyond the immediate limits of any historic district or resource directly adjacent to the Thruway. The limits for these resources are located on the NYS OPRHP's Cultural Resource Information System (CRIS) at: https://cris.parks.ny.gov/.

3.3.9 Wetland and Stream Information

Gantry Limits on Mainline
General information has been gathered relating to the potential location of wetlands and streams for the gantry limits along the mainline as identified in Part 7 Section 1 - Gantry Limits. Maps with this assessment information can be found in Part 7 Section 7 - Wetland Assessments. The Wetland Assessment maps display the following (be advised all wetland and stream boundaries are approximate):
Assessed Streams: Stream boundaries observed in the field within 50 feet from the edge of pavement.
Assessed Wetlands: Wetland boundaries observed in the field within 50 feet from the edge of pavement.
Mapped National Wetland Inventory (NWI) Wetlands**:** Mapped federal wetlands (US Army Corps of Engineers regulated).
Mapped NYSDEC Wetlands**:** Mapped NYSDEC Regulated Wetlands.

No wetland delineations were performed in the field in the locations of the Gantry Limits. No data sheets or other documentation are available.

In areas where Assessed Wetlands or Assessed Streams are shown, the Assessed Wetland or Stream boundary shall take precedence over the mapped boundaries. Any Assessed Wetland in close vicinity to a Mapped NYSDEC Wetland should be assumed to be part of that NYSDEC wetland. NYSDEC Wetlands include a 100 foot adjacent area beyond the wetland boundary. This 100 foot buffer is also regulated by NYSDEC. If an assessed wetland is not in the vicinity of either a "Mapped NWI Wetland" or a "Mapped NYSDEC Wetland", the wetland shall be assumed to be regulated by the U.S. Army Corps of Engineers.

Interchange Locations
Wetland delineations have been undertaken only at Interchanges 24, 25A, 34A, 36, 39 and 45 where modifications are being proposed to facilitate egress and ingress associated with the maintenance facilities, tandem lots and park and ride commuter lots. The wetland delineation information can be found in Part 7 Section 20 – Wetland Delineations.
The Design Builder shall assess all work areas for the presence of wetlands, which have not had wetland assessments or delineations completed. The Design Builder shall determine the wetland boundaries by field observations and shall perform all required wetland delineations, as needed to support permit requirements and approvals. The Design Builder shall compare the wetland boundaries to the Mapped NYSDEC wetlands to determine if work will occur in a NYSDEC Regulated wetland or its 100 foot adjacent area. The mapped NYSDEC wetlands may be found on-line at: http://www.dec.ny.gov/gis/erm/. The Design Builder shall coordinate with the NYSDEC Regional office to determine permit requirements based on the work being proposed. If an identified wetland is not determined to be regulated by the NYSDEC, the wetland shall be assumed to be a federal wetland, regulated by the U.S. Army Corps of Engineers. The Design Builder shall coordinate with the U.S. Army Corps of Engineers District office to determine permit requirements based on the work being proposed.

3.3.10 Environmental Plan Deliverables

Deliverables shall be as stated elsewhere in the RFP documents.

8.3.1 Electrical Power Supply and Distribution

8.3.1.1 General Requirements

The Design-Builder shall be responsible for the design and implementation of the necessary electricity supply commensurate with the Design-Builder's design, and for all planning and liaison necessary with relevant utility suppliers for the arrangements for provision of the necessary supply. The Design-Builder's design shall maximize the reliability of the normal power while minimizing the total installation cost and future electricity and maintenance costs. Wherever it is feasible and cost-effective, electricity shall be delivered to the Authority at the primary billing rate.

The Design-Builder shall purchase and install all necessary components required to deliver the electricity supply and distribution system including but not limited to the following: power substations, transformers and distribution equipment; electrical grounding and master metering; extension of the existing lightning protection system; excavation, paving, temporary construction barriers; structural elements for conduit systems; fire-rated electrical rooms; and fireproofing.

Utility Poles in the Right of Way are provided in Part 7 - Engineering Data, Section 13 – Power Poles and may be used as a mechanism to obtain electrical power lines required for equipment at the Cashless Tolling Gantries. The Design-Builder may construct one additional Utility Pole in the Thruway Right of Way as needed to support electrical power lines coming from Utility Poles adjacent to the Thruway Right of Way. The electrical power lines shall be transitioned from the Utility Poles in the Thruway Right of Way to underground lines to be designed and constructed by the Design-Builder. The power lines currently providing power to the Toll Plazas that are not going to be demolished shall remain as is.

The Design-Builder shall be responsible for commissioning electrical power systems.

All electrical work shall be performed by or under the supervision of a Master Electrician licensed in a New York State municipality.

All costs associated with the electrical provider's fees for applications, reviews, permits, and costs associated with the necessary electrical work provided by the electrical providers shall be paid for under the draw down force account item established on Form SP, for providing electrical power to the mainline and terminus Communication Buildings.

8.3.1.2 Emergency Power Generation

In the event that the normal electrical supply experiences an interruption at the Cashless Tolling locations, the supply system shall automatically switch to emergency power generation utilizing a diesel fuel generator and shall return to normal power as soon as the normal supply of electricity is restored.

The emergency power systems shall be capable of feeding the entire electrical load at each Mainline Cashless Tolling location, with the exception of any purely aesthetic light fixtures. Components (for example, automatic transfer switches) shall be sized and installed at locations to minimize the length of emergency power conduit and conductors.

At the ORT sites, emergency backup generators currently exist within the TUBs that are to remain or immediately adjacent to those TUBs. At least eleven locations of supplement power backup generators are required. The locations and requirements of those generators are found in Part 7 – Engineering Data, Section 12.

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

9.4.4.2 Post-Construction Condition Survey

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

9.4.4.3 Exclusions at Pre & Post Construction Surveys

The pre and post construction surveys do not apply to Thruway owned facilities or the State Police facilities located on Thruway property. The intent of pre and post construction surveys are for commercial businesses and private residences.

9.5 DIRECTIONAL DRILLING

Directional drilling depth requirements shall be a minimum of 42 inches or below the area's frost line whichever is greater.

~~9.5~~9.6 DELIVERABLES

Deliverables shall be as stated elsewhere in the RFP documents.

Except as noted in this Section, all asphalt pavement on the Thruway mainline shall be designed in accordance with the requirements of Chapter 6 of the Comprehensive Pavement Design Manual (CPDM) including Performance Graded Binder Selection, Compaction Monitoring, and Friction Aggregate Requirements.

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

Straight Tack Coat is required for all Mainline and Ramp pavement installations.

For HMA pavements, NYSDOT EI 18-016: New Standard Specification Section 653 Pavement Ride Quality Smoothness applies to this project. Pavement installation at Interchanges, , 23, 24, 25, 25A, 34A, 36, 39, 44, 45, 46, 47 shall be performed to the same ride quality requirements as Interstates.

16.3.1 Full Depth Reconstruction

Where the Design-Builder is required to do Full Depth Reconstruction, the Design-Builder shall develop and construct pavement section(s) for full depth reconstruction, including subbase, of the Project roadways in conformance with the Comprehensive Pavement Design Manual, using the ESAL-based pavement design method.

Full depth reconstruction is required within the limits of any horizontal alignment changes, or vertical alignment changes until such point as the revised alignment meets the existing alignment. However, increases in profile elevations, up to eight inches (8”), may be made through asphalt and concrete overlays without the requirement of full depth reconstruction. No partial-width full depth reconstruction will be permitted; any roadway requiring full depth reconstruction shall be reconstructed for its full width, including shoulders, curbs and/or sidewalks.

If any roadway is permanently widened, beyond the limits of the existing travel lanes, for the purpose of providing additional travel and/or turning lanes, new full depth pavement need only be developed and constructed for the widened section, provided that no other portion of the pavement within the widened section requires full depth reconstruction for any other purpose. However, the existing pavement within the widened section shall be milled and resurfaced from curb to curb or edge of pavement to edge of pavement to provide a uniform pavement as specified in Section 16.3.3. The exceptions to this requirement are the widened shoulders or turning radii to accommodate tandem truck routing as shown in Part 7 – Engineering Data, Section 3.

16.3.2 Gantry Approach Pavement

Non-metallic reinforced concrete pavement installed at the Gantry treadle detector slabs shall be placed at locations in accordance with current NYSTA Standard Sheets. Other new or reconstructed pavement within the Project limits that are not required to be non-metallic reinforced shall be designed and installed in accordance with Section 16.3.1.

All remaining existing areas of Toll Plaza pavement transition limits not reconstructed under the Project shall at minimum be milled and resurfaced in accordance with Section 16.3.3.

SECTION 19 SECURITY

~~Information is not yet provided.~~

19.1 SCOPE

The Design-Builder shall be responsible for all work necessary to complete the design and construction of all permanent security measures required to complete the Project, including, but not necessarily limited to the new Communication Buildings, both at the Mainline and Terminus locations and at the ORT Exit Sites. The design and construction of all security systems and components shall provide functionality, durability, ease of operations, maintenance, inspection, and safety.

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

19.2 STANDARDS

The Design-Builder shall perform all security design and construction activities in accordance with the Contract Requirements and the applicable Standards, Design Codes, and Manuals cited in Section 1.6, and specifications found in Part 8 of this RFP, unless otherwise stipulated in this Project Requirement or otherwise applicable to the Project.

19.3 REQUIREMENTS

Physical Security for Communications Buildings (Comm Bldgs) and remaining Toll Utility Buildings

The Design-Builder (DB) shall be responsible for the installation of security elements on all Comm Bldgs and the remaining Toll Utility Buildings.

For the Comm Bldgs supporting the mainline gantries refer to Part 3, Section 21.7.2 Figure 1 Communication Building layout. All of this work will be done in accordance to specification 683.9805xx25. The following elements will be included at each building:

1. One Interior fixed camera, ceiling mounted as to view anyone entering the building
2. Two exterior PTZ cameras, the first to be placed on the corner of the building which will allow a view of anyone entering the building. Do not place the camera behind the door. The second to be in the opposite corner in the back of the building. The PTZ cameras shall be corner mounted using a stainless steel outdoor rated corner mount support. The cameras shall be oriented so that both walls of the corner can be targeted by the PTZ camera.
3. A dual authentication card reader (HID reader/pin pad) is to be placed on the door for entry into the building, along with the appropriate IP based site controller. The interior of the door will utilize a 'request to exit'. The DB can include a crash bar or motion detector for request to exit functionality.

For the ORT sites refer to Part 7, Section 4 ORT COMMUNICATION BUILDING drawing number 3. All of this work will be done in accordance to specification 683.9805xx25. The following elements will be included at each building:

1. One Interior Fixed camera, ceiling mounted as to view anyone entering the building

2. Two exterior PTZ cameras, the first to be placed on the corner of the building which will allow a view of anyone entering the building. Do not place the camera behind the door. The second to be in the opposite corner in the back of the building. The PTZ cameras shall be corner mounted using a stainless steel outdoor rated corner mount support. The cameras shall be oriented so that both walls of the corner can be targeted by the PTZ camera.
3. A dual authentication card reader (HID reader/pin pad) is to be placed on the door for entry into the building. The interior of the door will utilize a 'request to exit'. The DB can include a crash bar or motion detector for request to exit functionality.
4. A dual authentication card reader (HID reader/pin pad) is to be placed on the door for entry into the recorder room and the door that accesses the basement of the Toll Utility Building. The interior of the door will utilize a 'request to exit'. The DB can include a crash bar or motion detector for request to exit functionality.
5. Appropriate IP based site controllers for the two buildings are required. All equipment required to be placed within these electronically secured areas.

Security equipment will be integrated into the existing Authority security systems by the Authority IT teams. The DB will be required to IP address all devices such that the Authority IT teams will be able to reach the devices for off-site configuration. The IP addresses will be supplied by the Authority's Network Services team.
All devices shall be cabled for connectivity to the Authority's network switch.
The procurement of additional video storage capacity to integrate with the Authority's existing system is required. All security video is recorded in HD 30fps with a 30-day storage capacity. The video storage hardware will be located in both the 200 Southern Blvd, Albany NY computer room and the Comm Hub located in Tarrytown NY. The DB will need to calculate the video storage needed and procure the appropriate number of video archivers to meet the storage as described. The current video archivers work with the NICE Vision system from Qognify. The model of video archivers we have now are the SVR9420 model, the DB will procure this model or the latest model available as approved by the Authority. The DB is responsible for procuring and delivering the video archivers to the Authority. The Authority will be responsible for all installation and configuration.

SECTION 20 TANDEM LOTS

20.1 SCOPE

The Design-Builder shall be responsible for the demolition of the Tandem Lot at Toll Exits 23 (Boulevard) and 39 (State Fair) and for the design and construction of a new Tandem Lot at Exit 39 and the service area (Dewitt) to be located as shown in the RFP Plans. The design and construction of the Tandem Lot at Exit 39 and Dewitt service area shall be understood to include the design, furnishing, and construction of all entrances and/or driveways providing access to and from the Tandem Lot(s), road appurtenances, lighting and safety devices not specifically cited in other Project Requirements.

The Design-Builder shall be responsible for the design, construction or reconstruction or modification thereof the driveway entrances and/or exits providing access to and egress from the Tandem Lots at Toll Plazas 17 (Newburgh), 18 (New Paltz), 19 (Kingston), 22 (Selkirk), 23 (Boulevard), 24 (Washington Ave.), 25A (Duanesburg), 27 (Amsterdam), 28 (Fultonville), 29 (Canajoharie), 31 (Utica), 32 (Westmoreland), 33 (Verona), 34 (Canastota), 34A (Collamer), 35 (Thompson Road), 36 (Mattydale), 39 (Statefair), 40 (Weedsport), 42 (Geneva), 43 (Manchester), 45 (Victor), 46 (Henrietta), 47 (Leroy), 48 (Batavia), 57 (Hamburg), 59 (Dunkirk), and 61 (Ripley), and any other entrances/exits or driveways damaged by construction operations, or necessary for permanent operations, all in accordance with the design requirements stated herein. Tandem Lot modifications Tandem Lot driveway design, construction and reconstruction shall be understood to include the design, furnishing, and construction of all road appurtenances, protections, and safety devices not specifically cited in other Project Requirements.

Proposed Tandem Lot routes are included in Part 7, Engineering Data, Section 3 – Tandem Lot Routes.

20.2 STANDARDS

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

20.3 REQUIREMENTS

20.3.1 Design Requirements

Design requirements for the reconstruction of Tandem Lot driveway entrances and exits within the Project Sites shall be as specified below.

20.3.2 Access Gate at Tandem Lot

There are 3 Tandem Lots and one service area (Dewitt) that require access gate control to the local and/or State DOT side of the Tandem Lot. These exits are Exit 24, Exit 46 and Exit 47 with the one service area being the DeWitt service area.

The Design-Builder is responsible for the design; acquiring all equipment, material, hardware and installation of the access gate. In addition, the Design-Builder is responsible for fiber connectivity, and providing electrical power to the access gate location. The location of access gate shall not be located within 100 feet of access drive road/intersection with local and/or State highway.

20.3.3 Cameras at Tandem Lots

The Design-Builder is responsible for purchasing and installing cameras potentially mounting hardware at various Tandem lots and an identified service area (Dewitt). Camera pole design, installation may also be required. Refer to Table 20-1 for the locations, availability of existing poles to mount the cameras and other information that may be of value to the Design-Builder.

The cameras required shall be able to view the entire lot including the entering and departure locations.

The cameras required for the access gate area shall be mounted so that Thruway TSOC can identify the single trailer seeking backside access to the Tandem Lot. The viewing of the vehicles will allow the Authority to raise and lower the access gate when needed and/or requested.

The following specifications apply, Items 651.0201, Item 651.02001525, Item 683.6730-25.

20.3.4 Protections of Existing Utilities at Tandem Lot Locations

The Design-Builder is responsible for ensuring that all existing utility structures, utilities or utility facilities are properly protected by appropriate guiderail systems depending on driveway designs or driving modifications.

Table 20-1

Tandem Locations

INTERCHANGE/LOT	OPEN/CLOSE/ RELOCATE/NEW	CAMERA NEEDED (Y/N)	ADD TO EXISTING TRAFFIC CAMERA POLE	ACCESS GATE NEEDED (Y/N)
6A (MP 5.47)	N/A	N/A	N/A	N/A
14 (MP 24.31)	N/A	N/A	N/A	N/A
15 (MP 32.40)	N/A	N/A	N/A	N/A
17 (MP 60.10 S)	OPEN	Y	Y	N
18 (MP 76.01)	OPEN	Y	Y	N
19 (MP 91.37)	OPEN	Y	Y	N
23 (MP 141.92)	CLOSE	N	N/A	N
24 (MP 148.15)	OPEN	Y	Y	Y
25A (MP 158.82)	OPEN	Y	N	N
27 (MP 173.59)	OPEN	Y	N	N
29 (MP 194.10)	OPEN	Y	N	N
31 (MP 232.85)	OPEN	Y	Y	N
32 (MP 243.37)	OPEN	Y	N	N
33 (MP 252.71)	OPEN	Y	N	N
34 (MP 261.50)	OPEN	Y	N	N
34A (MP 276.58)	OPEN	Y	N	N
35 (MP 278.93)	OPEN	Y	Y - Raise Camera/Pole	N
DeWitt Service Area (MP 279.9)	NEW	Y	Currently no camera/structure	Y
36 (MP 282.93)	OPEN	Y	Y	N
39 (MP 289.53)	RELOCATE	N	Y	N
40 (MP 304.19)	OPEN	Y	Y	N
42 (MP 327.10)	OPEN	Y	N	N
43 (MP 340.15)	OPEN	Y	N	N
45 (MP 350.99)	OPEN	Y	Y	N
46 (MP 362.44)	OPEN	Y	N	Y
47 (MP 378.56)	OPEN	Y	N	Y
48 (MP 390.13)	OPEN	Y	N	N

49 (MP 417.27)	OPEN	Y	N	N
57 (MP 436.22)	OPEN	Y	N	N
59 (MP 467.74)	OPEN	Y	N	N
61 (MP 494.50)	OPEN	N	Y	N

20.3.5 Tandem Lot Barrier Gate System

The Design-Builder shall provide a Barrier Gate System (BGS) to control access into and out of tandem lots at I-90 Interchanges 24, 46, 47, and the DeWitt Service Area. A single lane shall be instrumented with a BGS at each of these locations.

Door King Model # 1601 is provided as an example BGS that may satisfy these requirements, but the Design-Builder is free to propose other solutions. The Design-Builder must verify that all requirements are met by whatever solution is proposed.

The BGS shall control access to a single, bi-directional traffic lane 14 feet in width.

The BGS arm shall be 14 feet in length and constructed of wood.

The BGS shall be operable in temperatures between -20 to 140 degrees Fahrenheit, and shall include appropriate heaters and/or fans as specified by the manufacturer to meet this range of temperatures.

The BGS shall include a Vehicular/Pedestrian Detection System that prevents the barrier from coming down if a pedestrian or vehicle is detected under the gate.

The BGS shall include loops embedded in pavement on either side of the gate as specified by the manufacturer to prevent the gate from closing on vehicles in the path of the gate. The loops shall be connected to the BGS using loop controllers as specified by the manufacturer.

The BGS shall be operated on 115 VAC, 60 HZ input. The Design-Builder shall provide power to the BGS.

The BGS shall include a feature to automatically open the gate if power is lost.

The Design-Builder shall provide a means of gate equipment protection to protect the gate equipment from being damaged from vehicle hits (e.g. guiderail, post, etc.)

20.3.6 Tandem Lot Equipment Cabinet

The Design-Builder shall provide an equipment cabinet as specified in 680.8020XX25 Cabinets for ITS Equipment. The cabinet provided shall be the one specified for TRANSMIT. The Equipment Cabinet shall be mounted on a 20 foot tall pole, per the following specifications: 670.1120 (20' tall light pole), and 670.0106 (6' pole foundation)

The cabinet shall be mounted on the pole at a height of 3 feet.

The Design-Builder shall provide power and fiber optic communications to the cabinet. The fiber optic communications cable shall be terminated "SC".

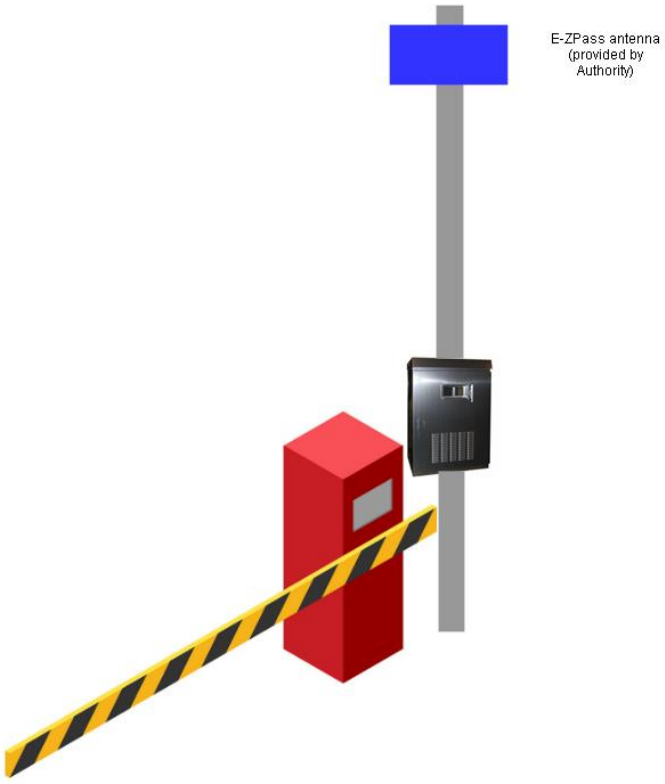
The Design-Builder shall install a conduit between the equipment cabinet and the BGS cabinet. The conduit shall contain an appropriate multi-conductor cable. In the BGS cabinet, the cable shall be connected to the appropriate connections on the BGS controller that when electrically connected cause the gate to rise. In the Equipment Cabinet, the multi-conductor cable shall be

connected to an appropriate switch that results in the connections on the BGS controller to be electrically connected, causing the gate to rise.

The Design-Builder shall install an appropriately sized conduit from the top of this structure to the Equipment Cabinet to enable the Authority to install Times LMR400 cable.

The Authority shall provide and install a side-fire E-ZPass antenna on the pole at a height of 17.5 feet.

A conceptual drawing is provided below:



20.4 DESIGN EXCEPTIONS AND NON-STANDARD FEATURES

It is the responsibility of the Design-Builder, in coordination with the Authority, to obtain acceptance of any non-standard features included in this final design.

20.5 DELIVERABLES

Deliverables shall be as stated elsewhere in the RFP documents.

SECTION 21 MAINLINE TOLLING GANTRIES (11 INTERECHANGES & 5 TERMINUS)

21.1 SCOPE

The Design-Builder shall design and construct Cashless Tolling Gantries at the following locations: between 22 (Selkirk) and 23 (Boulevard), between 23 (Southern Boulevard) and 24 (Washington Ave.), between 24 (Washington Ave.) and 25 (Schenectady), between 25 (Schenectady) and 25A (Duanesburg), between 25A (Duanesburg) and 26 (Rotterdam), between 34 (Canastota) and 34A (Collamer), between 34A (Collamer) and 35 (Thompson Road), between 35 (Thompson Road) and 36 (Mattydale), between 36 (Mattydale) and 37 (Electronics Parkway), between 38 (Liverpool) and 39 (State Fair), between 39 (State Fair) and 40 (Weedsport), between 43 (Manchester) and 44 (Canandaigua), between 44 (Canandaigua) and 45 (Victor), between 45 (Victor) and 46 (Henrietta), between 46 (Henrietta) and 47 (Leroy), between 47 (Leroy) and 48 (Batavia).

Mainline Gantries are also required at the following Terminus Locations: Woodbury (Approx. MP 45.03), Canaan (Approx. MP 17.83), Williamsville (Approx. MP 419.60) ; Lackawanna (Approx. MP 430.52), and Ripley (Approx. MP 494.51).

Location of Gantries shall be constructed within the limits described in Part 7 – Engineering Data, Section 1. The Design-Builder shall not place any Mainline Gantries beyond the specified limits. Gantries shall not span over the acceleration or deceleration ramps.

The Design-Builder shall be responsible for reducing the footprint currently leading into and out of the Toll plazas at the Terminus locations, which will involve pavement removal work, Toll Plaza removals, potential positive separation of opposing traffic flow, placement of barrier/guiderail to delineate active lanes, striping, drainage, etc. are all part of the work.

Mainline Gantries shall not be placed in Wetland Assessment Areas and/or Historic Districts. Wetland Assessments are provided in Part 7 - Engineering Data, Section 7.

21.2 STANDARDS

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

21.3 GENERAL REQUIREMENTS

The Mainline Gantries shall be located to ensure that the Authority can capture where vehicles enter and exit the Thruway system. This is imperative and required so that the Authority can accurately bill motorists by providing the entry and exit locations of each vehicle. It also ensures proper and accurate revenue collection, and potential projections thereof..

The Mainline Gantries shall be designed and constructed so that maintenance and/or replacement, inspection, and adjustments of Cashless Tolling Equipment attached to the Mainline Gantries can be accomplished without the need for any lane(s) taken out of service, which subsequently impacts traffic. To access the equipment to perform maintenance, replacement, inspection, or modifications, the Mainline Gantries shall have a 4 foot minimum, 5 foot maximum, walkway system above traffic with easy accessibility from this walkway to the various equipment components.

The Kapsch Vehicle Detection, Tracking, Triggering and Classification System (nVDC) unit mounted below the horizontal Gantry structure is required to be accessible and available for maintenance repair and/or replacement by Authority employees from the gantry walkway. The requirement entails that work to repair/replace or adjust the operations of nVDC unit shall occur from the Mainline Gantry walkway. Employees of the Authority shall have full access to the nVDC from this walkway area and be able to remove and replace each piece of Equipment from the walkway area. No lane closures shall be required to replace, repair/or adjust the nVDC units. The nVDC units must be accessible and be able to be worked on while the employee is on the Mainline Gantry walkway. The mechanisms to access the equipment (cameras/lasers/ illuminators/nVDC units) shall not require tools to safely protect the traffic below. The access to the equipment to be worked on may require leverage mechanisms. Those leverage mechanisms shall be tethered and the tether cannot be greater than 3 feet

The access opening for the nVDC unit shall require a retraction up into the walkway area (not a lift and place). Once the nVDC unit is in the working position the gap/opening that is generated by this action has to be protected/covered so employees or equipment cannot fall to the traffic below. The access opening must be securely closed. The access opening area shall also be outlined in yellow paint as to denote the potential for a possible opening for safety awareness. The gantry grating requires a 3" yellow stripe around the nVDC hatch or opening. The top and side surfaces of the grating must be painted so that the stripe is visible from above. The surface shall be suitably prepared, primed with 100% lead-free metal primer, and factory painted with at least two (2) coats of DuPont Centari Acrylic Auto Enamel Yellow 224AK (100% lead free); or Rust-Oleum Corp. MFG #260277 paint, yellow base/low VOC, ALKYD Enamel NYSTA Yellow #2 (100% lead free); or approved equal.

The stairway to the walkway shall be steady with minimal movement. Only one stairway to access the walkway is required. The minimum stairway interior width shall be 24" (inside of railing to inside of railing.

Access to the walkway from the ground level shall be via stairways, founded on a concrete pad. All walkway areas, on the Mainline Gantries and stairways shall not retain snow nor allow icicles to form for the safety of the traveling public and employees. To access the stairways the Design-Builder shall provide for a minimum of 2 paved parking spaces within 150' of the stairways to ensure ample safety so that employees do not have to cross highway traffic to perform the repairs or inspection of the gantry. The pathway from the parking spaces to the stairways shall be a paved pathway.

The Mainline Gantry Walkways shall have handrails on both sides and a continuous tie off mechanism that minimizes the number of times an employee has to reconnect as they travel across the Mainline Gantry. The handrails, when not in use, shall be retractable and still remain secure. The railings when not in use shall not be seen by the traveling public. The elevation view of the Mainline Gantry itself as traveler's approach should not be viewed as a multiple type structure but rather as a single element, even though that is not the case. In other words, the Mainline Gantry should look streamlined. In addition, negative camber is not allowed.
The Design-Builder shall install electrical and fiber conduits to connect the Cashless Tolling Equipment to the Communications Building. The conduits shall be hidden from view and shall be protected from vandalism.

Whatever Mainline Gantry design is used at one location, the style shall be used throughout the ticketed system for all Mainline Gantries and Terminus locations for the purposes of consistency, maintenance access, maintenance repairs, parts, and other reasons that benefit the Authority. Obviously spans dictate member sizes but the style of the Mainline Gantry shall remain the same.

The equipment locations, their distances from the Roadway surfaces, and their relation to one another, is presented in a graphical display of these requirements, later in this section.

- The Design-Builder shall reconstruct the entire pavement shoulders within the reconstruction limits defined above. The shoulders to be reconstructed shall be full depth asphalt to allow for loops to be cut into the asphalt. The Design-Builder is responsible to ensure proper drainage of the shoulder areas and treadle slabs.
- The Mainline Gantries shall be fully completed and conduits from the Communication Building to the Mainline Gantries along with all the mounting hardware, brackets or arms shall be in place so that cameras, antennas, laser scanners and illuminators can be attached by Kapsch and adjusted.
- Cashless Toll lanes and shoulders shall as a minimum match the maximum number of approach lanes and shoulders entering the Cashless Toll Collection Zone;
- Design-Builder shall ensure the slab containing the treadle and trench drain shall be embedded in a minimum of 22 inch of heavily reinforced Portland Cement Concrete (PCC) utilizing fiber reinforced polymer (FRP) reinforcing bars so as not to interfere with the Authority's toll collection system

21.4.1 Woodbury Terminus Location

Terminus location at Woodbury requires the design and construction of a vehicle enforcement area for the State Police. It shall be provided after the mainline gantry as traffic heads South. The required enforcement area shall be constructed utilizing the current available concrete pavement located to the West of the traffic headed South. Proper deceleration and acceleration lanes shall be applied. The vehicle enforcement pertains to all types of vehicles utilizing the Thruway, from tandems to passenger vehicles. Proper pavement striping, signage is required. The Design-Builder is responsible for the full design and construction at this location. Refer to Part 7 – Engineering Data, Section 5 for concept drawings. This particular location does not require a reduction of the overall infrastructure foot print, with the exception of the area specifically designated to be removed involving the deceleration lane and ramp to Exit 16 for traffic heading South. See concept drawings. The Design-Builder shall be aware for traffic heading North that the pavement area is more than required. The Design-Builder based on the design shall be required to properly channelize traffic with, as a minimum proper striping, cross hatching, and signage to ensure the proper and safe passage of traffic heading North to through the mainline gantry or Exit 16.
The design speed at the Woodbury terminus location is 80 mph and is designated a rural/suburban area. The e_{max} in this area shall be 8%.

21.4.2 Williamsville and Lackawanna Terminus Locations

Terminus locations at Williamsville and Lackawanna have design speeds of 70 mph and are designated as urban areas. The e_{max} in these areas shall be 6%.

21.4.3 Canaan and Ripley Terminus Locations

Terminus locations at Canaan and Ripley have design speeds of 80 mph and are designated as rural areas. The e_{max} in these areas shall be 8%.

21.5 KAPSCH REQUIREMENTS

The Authority has selected Kapsch TrafficCom USA Inc. (Kapsch) to supply, install and monitor the Cashless Tolling system at all Mainline Gantries. The Design-Builder shall coordinate activities with Kapsch for installation at each Communication Building~~Mainline Gantry~~ site as per the following requirements:

Kapsch will provide a maximum of six (6) teams that will be able to install and test the Cashless Tolling Equipment at each ~~Mainline Gantry and~~ Communication Building site. Kapsch will install all tolling

equipment/server/additional racks for each lane/all wiring and cables from the Communication Building to the Mainline Gantry(ies) to the Mainline Gantry(ies) equipment with the exception of the Network rack supplied by the Design-Builder.

Kapsch will complete their installation and test their system in 30 calendar days not including major holiday weekends. The Design-Builder shall notify Kaspch 30 calendar days prior to the expected completion of the Mainline Gantry(ies) associated with the Communication Building so that Kapsch can secure resources for installation. Kapsch will need one (1) week prior to commencement of Kapsch work in order to deliver equipment and supplies for the Communication~~s~~ Building and Mainline Gantry(ies). The Design-Builder shall prepare an area for the delivery of this equipment. Kapsch shall supply the size of the area based on the Design-Builder's design. Each Kapsch Team will need one (1) week after a Communication Building~~Mainline Gantry~~ site has been tested, adjusted, and/or modified to re-stage at another requested Communication Building~~Mainline Gantry~~ site.

For Kapsch to do this work, and meet the thirty (30) calendar day window, to install the cashless tolling equipment, wiring, Communications Building racks, and test all of the equipment, the following work shall be done prior to Kapsch beginning work at the Communication Building site. The Design-Builder shall ensure that the following work is complete:

Road Surface

- Treadle Frame installed as per specifications and requirements
- Shoulders reconstructed as specified
- 100 ft. of concrete slabs (30 ft. after the treadle slab and 70 ft. before the treadle slab) installed at correct superelevations

Mainline Gantry

- Mainline Gantries, Communications Buildings, Trenching and Conduit Installation fully complete including, but not limited to Mainline Gantry walkways with railings in place, all associated arms and brackets, nVDC access, retractable equipment mechanisms, fiber connecting to the Communications Building, electrical power to the Communications Building, lightning protection, back-up generators, etc.
- Cable lengths shall not exceed 250' which includes service loops from the furthest rack in Communications Building to piece of equipment.
- All equipment shall have overhead access except the antenna.
- Further details are found later in this section and in the confidential information that was provided the Design-Builders that required the nondisclosure agreement to access.

Communications Building

- Purpose is to house specialized computer equipment provided by Kapsch to operate the AET toll system and the Authority's network equipment
- Kapsch to provide computer cabinets
- Design-Builder to provide both vertical and horizontal cable trays within the Communications Building.
- Power outlets to be provided on the ceiling and walls
- Fiber access to a Thruway network rack provided by the Design-Builder is required

Pre-Installation Requirements

Kapsch will install their system when the following conditions have been met:

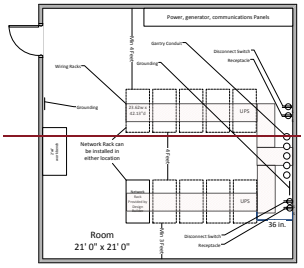
- ☑ Mainline Gantry Installed with brackets, conduit, pull boxes and accessible stairs in place
- ☑ Concrete slabs with treadle frame and dummy treadle installed
- ☑ Shoulder pavement in final condition with shoulder pull box installed

- Conduit from gantry, treadles, shoulder pull box to Communication Building installed
- Communications building operational with permanent power, secondary generator power (backup) and terminated fiber connectivity, HVAC in place and operational.
- Communications building vehicular access and parking area installed

Kapsch shall test each individual site separately. Prior to the AETC "go live" date, Authority shall test the entire system after all individual locations have already been tested. The test of the entire system requires 30 calendar days. The Design-Builder shall provide two weeks' notice for Authority to commence the testing of the entire system.

21.6 RESPONSIBILITY MATRIX

Item	Design-Builder	Kapsch	Thruway
Install gantry	X		
Install Bracketry	X		
Install Stairway	X		
Gantry-Comm-Bldg Conduit	X		
Communication Bldg	X		
Power	X		
Generator	X		
Fiber Communications	X		
Fiber Connectivity to Network Rack			X
Treadle Frame Installation	X		
HVAC	X		
Lighting Protection	X		
Overhead Access to Equipment			
Install overhead equipment		X	
Cabling		X	
Kapsch Equipment Racks		X	
Network Equipment	X		
Network Rack	X		
MPT	X	X	



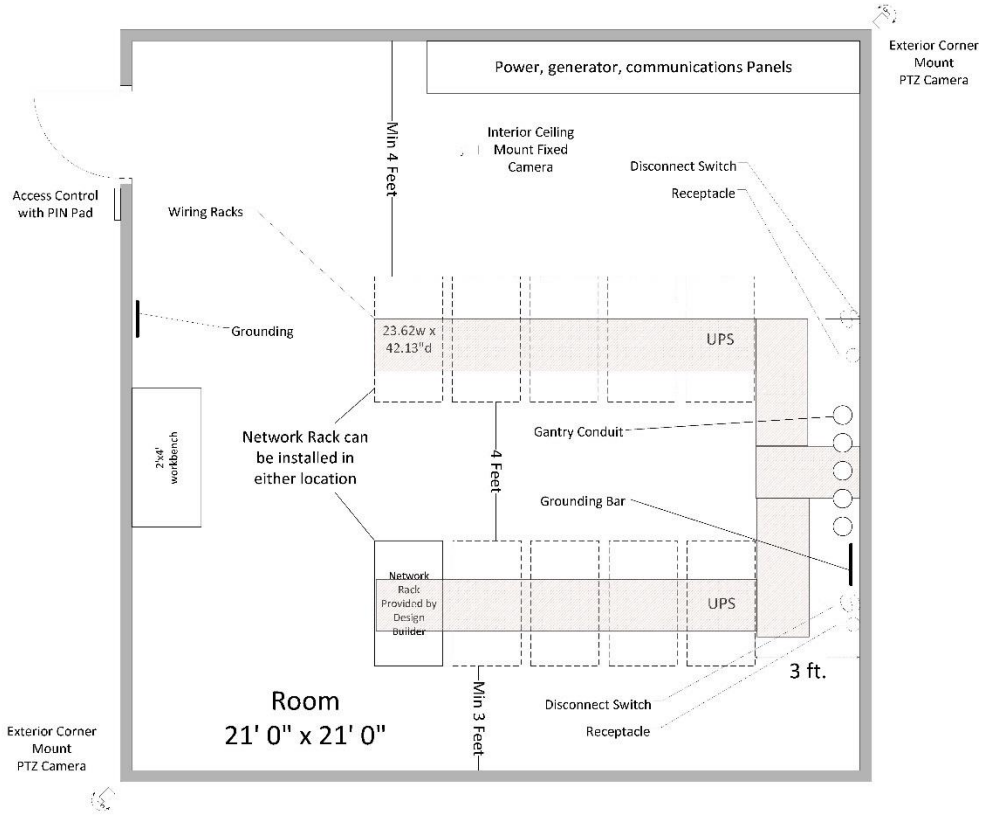


Figure 1

21.7.3 Power

The Kapsch will provide an online UPS system which will power its system

The Design-Builder will provide an electrical panel with a 70A breaker which is downstream of the transfer switch, such that the system has to be fed by grid power with backup generator power in case of power interruptions. The UPS powers the system when the grid power suffers an outage. The Design-builder will provide a two separate disconnect switches and a receptacles in close proximity (within 3 feet) from Kapsch provided UPS (See Figure 1). The Design-Builder is required to provide the pigtail and plug to connect the Kapsch system to the above mentioned receptacle.

The Design-Builder shall provide separate conduits connecting the gantry to Communications Building for power and communication.

All Open Road Tolling Mini-Gantry Components shall have a protective coating system such as galvanizing or metalizing to ensure long term durability and resistance to corrosion or degradation of the initial design strength. Painting is not an acceptable solution.

The span length of each Open Road Tolling Mini-Gantry shall be determined by the Design-Builder. The Mini-Gantries may span across traffic in both directions or they could be two separate Mini-Gantries each handling traffic in opposing directions. Regardless of span choices the vertical supports of the Open Road Tolling Mini-Gantry shall be protected via an appropriate barrier system in compliance with the design standards. Under no circumstance, even if the vertical supports are outside the clear zone, can they be unprotected.

Open Road Tolling Mini-Gantries shall not be located within 150 feet before overhead roadway signage. If within those locations, the Design-Builder shall be required to remove the overhead sign structures and replace with ground mounted signs per the MUTCD, whether dictated by the Authority or the Design-Builder's choice.

Provide supplemental or new generator backup with 100% generator redundancy for a minimum of 48 hours of continuous operation of ORT Cashless Toll Collection facilities. Diesel generators shall be utilized for this purpose in accordance with requirements described in Part 7 – Engineering Data, Section 12 - Generator Capacity for ORT. Any generators taken out of service at the ORT Exit sites shall become the property of the Authority. Design-builder shall notify the Authority once the generator is placed out of service and the Authority will pick the generator up.

22.3.1 Overview

Each ORT Gantry site will include both software and hardware to enable the Authority to collect tolls electronically.

Software to operate the toll collection system for ORT shall be provided by the Authority.

Hardware to operate the toll collection system for ORT shall be provided by the Design-Builder or the Authority as specified in the following pages. Hardware includes the following:

Overhead E-ZPass antennas, laser scanners, and cameras mounted on the top of the gantry.

Treadle frames and loops installed in concrete pavement.

Various computer servers, uninterruptable power supplies, and networking equipment to be installed in the ORT Communication Building.

Design-Builder shall provide and install all conduit, cabling, cabinets, and mounting apparatus for the toll collection system for ORT.

Design-Builder shall provide gantries to mount overhead equipment.

Design-Builder shall provide ORT Communication Building to install toll collection equipment for ORT.

Design-Builder shall ensure that on-site / construction radio frequency device(s) will not interfere with the Authority's toll collection system for ORT. The E-ZPass system uses equipment operating in the 915 Mhz band.

Equipment heights specified in this section are relative to the pavement in the lane over which the equipment is mounted.

A schematic of the ORT Gantry with various lane configurations is provided in the Part 7 – Engineering Data, Section 4.

22.3.2 ORT Toll Lane Requirements

Travel lanes shall be 12 feet wide. Lanes approaching the tolling area that are wider than 12 feet shall taper so that lanes passing under the mini-gantry shall be 12 feet exactly.

Exit lanes shall be constructed of concrete, as described below. Entry lanes shall be constructed of full depth asphalt.

For sites where there are two or more travel lanes in one direction, right shoulders shall be a minimum of 6 feet wide. For sites with only one travel lane in a given direction, right shoulders shall be a minimum of 10 feet wide. Shoulders with a width greater than 6 feet shall be fully instrumented with toll equipment for ORT.

Concrete slabs containing the treadle, trench drain, and loops shall be 22 inch reinforced Portland cement concrete (PCC) utilizing fiber reinforced polymer (FRP) reinforcing bars so as to not interfere with the Authority's toll collection system for ORT.

In exit lanes, each loop must be contained in a single concrete slab.

If the treadle slab is constructed within pavement super elevation transitions, the maximum cross slope shall not exceed 3 percent (%)~~degrees~~.

Treadle approach pavement shall be a minimum of 18-feet long of new, full depth concrete pavement.

Treadle departure pavement shall be a minimum of 18-feet long of new, full depth concrete pavement.

Cross-slope through the plaza shall not exceed 3 percent (%) and shall be 1.5 percent (%) minimum continuous through the shoulders.

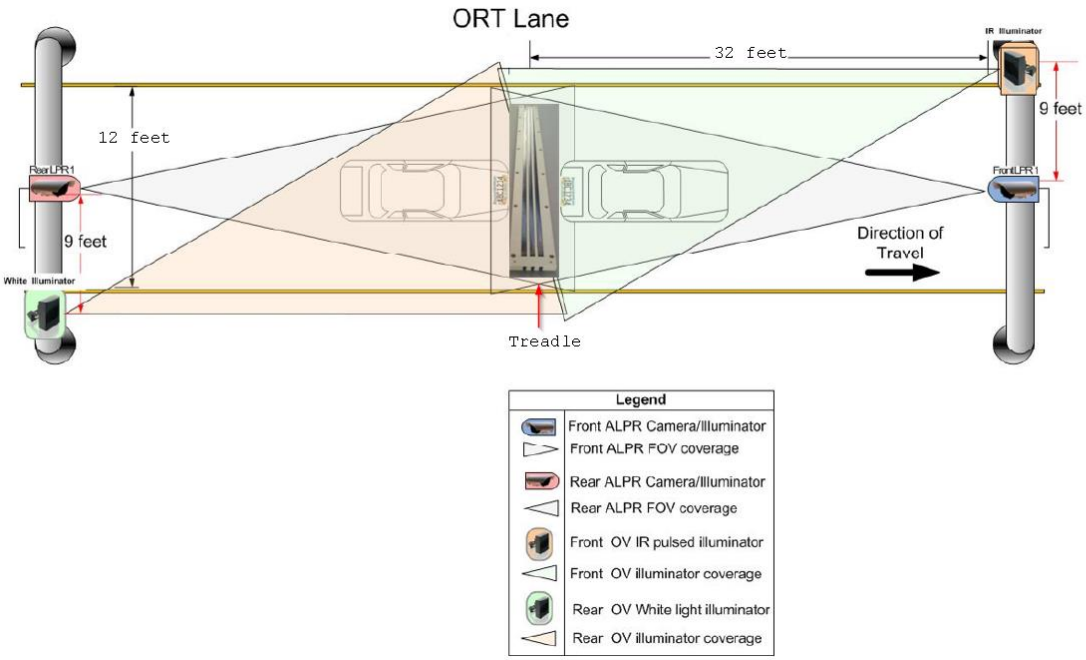
22.3.3 Gantry Requirements

The Design-Builder shall provide an overhead structure functionally consistent with the ORT Gantry Schematic.

The Design-Builder shall procure and install equipment mounts as specified below. The ORT gantry shall support flexible placement of equipment mounts. All supports in the vicinity of the equipment shall not interfere with the placement or field of view of the equipment. Supports shall not be placed on the center lines or split lines of the lanes.

Conduit shall not impede access to equipment for installation or maintenance purposes.

The ORT Gantry shall be grounded.



The camera shall be Inex part # IZA-800ORT-L-TWY. Dimensions for the camera are 17.7 x 6.7 x 4.6 inches. Weight is 5 lbs.

The proper Inex camera mount and Inex illuminator mount depend upon the gantry proposed by the Design-Builder. The Design-Builder shall contact Inex to determine the correct mounts to order.

The camera shall be mounted using Inex part # MNT-GL-UCAIZ or MNT-GS-UCAIZ. There shall be one front and one rear camera in each lane.

The rear camera illuminator shall be Inex part # IZ-SW2-20 (white light illuminator). The rear camera illuminator shall be mounted using Inex part # MNT-GL-UIL or MNT-GS-UIL.

The front camera illuminator shall be Inex part # IZ-S2-20 (infrared light illuminator). The front camera illuminator shall be mounted using Inex part # MNT-GL-UIL or MNT-GS-UIL.

The Design-Builder shall provide and install ~~three~~two appropriately sized conduits for power cables, communication cables, and possible future addition of a second front camera in each instrumented lane. Power cables and communication cables shall be routed through separate conduits. The Design Builder shall provide a hinged, stainless steel junction box for D.C. power and communications within 6 feet of each camera to support the “whip” cables from the camera/ illuminator to the junction box. The enclosure is to be NEMA 4x rated and have a minimum size of 12”H x 12”W x6”D. The enclosure must include a removable back panel and no conduit connectors shall impede the installation and removal of the back panel. The design builder shall install 4 weather tight connectors for ¼” diameter cables in the enclosure to support the whip cables. No penetrations are permitted through the top of the enclosure.

The Design-Builder shall provide:

- A separate power cable for each camera.
- A separate power cable for each illuminator.
- A separate communication cable for each camera.

- Albany Division: 12
- Syracuse Division: 12
- Buffalo Division: 9

The Design-Builder shall notify the Authority 30 calendar days prior to the expected completion of the ORT Gantry so that the Authority can schedule resources for inspection and installation.

~~The Authority will secure all lane closures for Authority personnel to complete their work.~~

Authority staff / Authority Quality Assurance Firm will be performing inspection of all components installed by the Contractor at the ORT sites, as specified in the ORT Ramp checklist that follows this section. The Authority can support inspection at a maximum of four ORT gantry sites per division simultaneously. The Design-Builder shall provide any lane closure and equipment required for Authority personnel to complete this inspection.

To facilitate system testing, the Design-Builder at a minimum shall construct the first ORT Gantry site at Interchange 22 – Selkirk, NY by the end of 2019. The Authority and Authority's Quality Assurance Firm will inspect this site frequently during construction to insure that the first installed ORT Gantry location meets the requirements for quality workmanship, RFP intent, and design standards. The results of the inspections will be reviewed with the Design-Builder so that all future installations are consistent and include any changes that were made to the Interchange 22 – Selkirk, NY site.

Once the Design-Builder proves that the checklist is complete at a site, a NYSTA installation team will start to install the equipment on the gantry and in the Communications Building. If the NYSTA installation team finds any problems with any of the cables (power, communication, coax, etc.) the Design-Builder will be required to provide the resources to replace the cable within 10 business days.

ORT Ramp Checklist

For NYSTA to install the ORT tolling equipment on the gantry and in the ORT Communications Building, the Design-Builder shall ensure that the following work is complete:

Road Surface, Pull Boxes

- ☐ Treadle Frame installed as per specifications and requirements
- ☐ Treadle installed, cables through pull box and into ORT Communications Building
- ☐ Shoulder pavement in final condition with shoulder pull boxes installed
- ☐ Treadle strips installed in shoulder (as required), cables through pull box and into ORT Communications Building
- ☐ 36 ft. of concrete in exit lanes, and 36 ft. of full depth asphalt installed in toll zone per plans
- ☐ Loops installed per plans, cables through pull box and into ORT Communications Building
- ☐ Permanent Positive separation installed between opposing directions of travel
- ☐ Two paint stripes installed on all entry lanes

ORT Communications Building

- ☐ Permanent electrical power & grounding
- ☐ HVAC installed and operational
- ☐ Transfer switch installed in NEMA 4X cabinet outside
- ☐ Generator installed and connected
- ☐ Equipment racks installed
- ☐ Vertical and horizontal cable trays installed
- ☐ Power outlets to be provided per the specification

22.4 OPEN ROAD TOLLING (ORT) WORK AT EXIT SITES

22.4.1 General Requirements

Directive Requirements for the construction of the Open Road Tolling (ORT) system at each interchange shall be as specified below and elsewhere in this RFP. Refer to the corresponding concept plans for details found in Part 7 – Engineering Data, Section 2:

- ORT Zones shall be installed within the "Potential Tolling Area" locations shown on the concept plans
- Locations for access to the Maintenance Facilities, Tandem Lots, Commuter Parking Lots and State Police Facilities as shown on the concept plans. The locations are directive but the path from Point A to B can be modified. A new location is not allowed without an ATC.
- A single lane access driveway with two (2) parking spots shall be provided within 15 ft. of each communications building door. These lots shall be paved, as will the access driveway and walkways to the Communication Buildings.
- All TUBs are to remain in place.

General Design Requirement for the construction of the Open Road Tolling (ORT) system at each interchange shall be as specified below (Refer to corresponding concept plans for details):

- Ramp lane widths – 12 ft minimum
- Ramp shoulder widths – A single lane paved access driveway with two (2) paved parking spots shall be provided. Paved ~~V~~vehicle access to within 15 ft. of each communications building door shall be provided as well so that equipment can be unloaded. From vehicle access termination to the door entry shall also be paved.
- Ramp shoulder widths within the ORT Zones shall be in accordance with the graphics posted.
- Design vehicle for tandem truck movements – WB-109D
- Design vehicle for Thruway Maintenance facility driveways – WB-62 unless shared with tandem truck lot, then use WB-109D
- The alignments shown in Part 7 – Engineering Data, Section 2 and those alignments are conceptual (not engineered) and the Design-Builder is responsible for alignment design but with meeting the requirements below.
- Design Speed of 40 MPH – Semi-direct Connecting Ramp
- The Design-Builder based on design speed stated is responsible for proper superelevation or cross section of highways.
- Pavement repairs are required at some ORT sites and can be found in Part 7 – Engineering Data, Section 14.
- All Gantry supports shall be protected with some level of guiderail per current standards. Even if the Gantry supports are outside the clear zones a guiderail protective system is still required to protect the Thruway's Tolling revenue.
- There currently exist at the ORT Exit sites four (4) foot medians leading from the Thruway into the Toll Plaza area. That median area needs to be carried through the new ORT Exit site alignments. Whether it is positive separation or delineators, a minimum of 1 foot left shoulder shall be required.

A. Restripe the plaza to align the lanes with the appropriate number of toll lanes to manage the peak hour traffic flow for temporary traffic control prior to and during the toll plaza removal.

B. Entering traffic

- The lanes shall connect to the 1 lane and shoulder entering the plaza from Rte 23B to meet the 1 lane with shoulder at the south limit of the ORT zone.

C. Exiting Traffic

- The 2 lanes from the ramps shall continue through the toll plaza with the right lane dropping to meet the Maintenance and Parking Lot Driveway

D. Complete installation of positive protection barrier and delineators as shown on the concept plan.

E. Remove pavement to provide footprint reduction areas and these areas should be top soiled and seeded.

Exit 21B Coxsackie

The Design Builder shall construct an ORT zone at the west side of the toll plaza with 1 lanes and shoulder in each direction with delineators for a Design Speed of 40 MPH – Semi-direct Connecting Ramp.

After the ORT toll system becomes functional Design Builder shall remove the existing toll plaza and connect the ORT Toll Zone to Rte 9W as follows:

A. Restripe the plaza to align the lanes with the appropriate number of toll lanes to manage the peak hour traffic flow for temporary traffic control prior to and during the toll plaza removal.

B. Entering Traffic

- The entering lanes shall transition from the existing 1 lane and shoulder entering the plaza from Rte 9W to meet the 1 lane with shoulder at the west limit of the ORT zone.

C. Exiting Traffic

- The 1 lane through the toll zone shall widen to 2 lanes after the toll zone to meet the existing 2 lanes at the slip ramp to Rte 9W.

D. Complete installation of delineators

E. Remove pavement to provide footprint reduction areas and these areas should be top soiled and seeded.

Exit B1

The Design Builder shall construct an ORT zone either at the south side or the north side of the existing toll plaza where the ramps merge with 2 lanes and a shoulder in each direction with positive protection barrier for a Design Speed of ~~40~~60 MPH – Semi-direct Connecting Ramp. Prior to the Go Live Date the Design Builder shall:

After the ORT toll system becomes functional Design Builder shall remove the existing toll plaza and connect the ORT Toll Zone to Rte I-90 as follows:

A. Restripe the plaza to align the lanes with the appropriate number of toll lanes to manage the peak hour traffic flow for temporary traffic control prior to and during the toll plaza removal.

B. Entering Traffic

- The southbound entering lanes shall transition from the existing 3 lanes and shoulder entering the plaza from Rte I-90 and Rte 9 ramp and transition to 2 lanes with shoulder at the north limit of the ORT zone, dropping the right lane as a traditional acceleration lane.

C. Exiting Traffic

- The 2 northbound exit lanes shall continue to meet the 2 I-90 Mainline lanes, restripe the plaza to develop a deceleration lane and taper for the exit to NYS Rte 9 with 1 lane and a shoulder.

D. Complete installation of positive protection barrier.

E. Remove pavement to provide footprint reduction areas and these areas should be top soiled and seeded.

Exit B2

The Design Builder shall construct an ORT zone just south of the existing toll plaza with 2 lanes and a shoulder in the northbound direction and one lane with a shoulder in the southbound direction including a median turn lane with Delineators for a Design Speed of ~~40~~55 MPH – Semi-direct Connecting Ramp.

Prior to the Go Live Date the Design Builder shall:

A. Close the existing Maintenance Driveway on the north side of the toll plaza.

B. Widen the existing Maintenance Driveway south of the toll plaza.

After the ORT toll system becomes functional Design Builder shall remove the existing toll plaza and connect the ORT Toll Zone to the Taconic State Parkway as follows:

A. Restripe the plaza to align the lanes with the appropriate number of toll lanes to manage the peak hour traffic flow for temporary traffic control prior to and during the toll plaza removal.

B. Entering Traffic

- The northbound entering lanes shall continue the existing 2 lanes and develop a shoulder to meet the 2 ramp lanes at the north limit of the existing toll plaza.

C. Exiting Traffic

- The 2 southbound exit lanes shall transition to 1 through lane and a median lane prior to the north limit of the toll zone. The through lane shall meet the existing 1 SB lanes at the Taconic State Parkway. A 12 ft median with turn lane should be developed for the access to the Maintenance Driveway.

D. Complete installation of Delineators.

E. Remove pavement to provide footprint reduction areas and these areas should be top soiled and seeded.

The Design Builder shall construct an ORT zone to the east of the toll plaza and Maintenance driveway where the ramps split with 2 lanes and a shoulder in each direction with delineators for a Design Speed of 40 MPH – Semi-direct Connecting Ramp.

Prior to the Go Live Date the Design Builder shall:

A. Stripe the tandem parking lot to show the driveway connection to the Maintenance area.

B. Close the Maintenance driveway to the east of the toll plaza. It is permissible to locate the mini-gantry adjacent to the existing maintenance driveway which is to be removed.

After the ORT toll system becomes functional Design Builder shall remove the existing toll plaza and connect the ORT Toll Zone to Rte 30 as follows:

A. Restripe the plaza to align the lanes with the appropriate number of toll lanes to manage the peak hour traffic flow for temporary traffic control prior to and during the toll plaza removal.

B. Entering traffic

- install striping from northbound Route 30 onto and along the entrance ramp to the tandem truck/maintenance driveway so only one lane is provided for Rte 30 entering traffic.
- Starting at that driveway provide two lanes to the ramp split.

C. Exiting traffic

- maintain two through lanes and develop a left turn lane into the tandem truck/ Maintenance driveway.
- after the driveway entrance widen to three lanes approaching the intersection with two for right turns and the other for through traffic and left turns.

D. Complete installation of delineators and striping

E. Remove the parking on the east side of the toll building.

F. Remove pavement to provide footprint reduction areas and these areas should be top soiled and seeded.

Exit 28 Fultonville

The Design Builder shall construct an ORT zone to the south of the existing toll plaza between where the ramps merge and the State Police driveway with 2 lanes and a shoulder for exiting traffic and 1 lane with a shoulder for entering traffic with delineators for a Design Speed of 40 MPH – Semi-direct Connecting Ramp.

Prior to the Go Live Date the Design Builder shall:

A. Reduce the width of the driveway to the State Police building, providing one lane in each direction.

After the ORT toll system becomes functional Design Builder shall remove the existing toll plaza and connect the ORT Toll Zone to Riverside Drive as follows:

SECTION 23 INTERCHANGE WORK

23.1 SCOPE

The Design-Builder shall be responsible for the design and construction of all work in the interchanges of Exit 23, 24, 25, 25A, 34A, 36, 39, 44, 45, 46, and 47. The concept plans can be found in Part 6 Indicative/Concept Plans. The Concept Plans provide an overview of the idea and scope of work the Thruway wants to see in the proposals. The number of lanes of opposing traffic is shown which corresponds to the information provided in Part 7 – Engineering Data Section 18. The volume of traffic and the hour by hour data of traffic can be found in Part 7 – Engineering Data Sections 19. Section 18 also provides other information relative to positive separation, design speeds, etc. that the Design-Builder shall use in the design and modifications of these interstate to interstate connections.

23.2 STANDARDS

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

23.3 GENERAL REQUIREMENTS

Concept plans for all eleven interchanges are found in Part 6 Indicative/Concept Plans. Pavement repairs and the required minimal limits to those repairs are provided in Part 7 – Engineering Data Section 14. Requirements for these interchanges include the sealing of concrete cracks, full depth isolated repairs, toll booth removal to the limits defined in Section 14 and the addition of the proper superelevations or cross slopes for the design speeds. At some interchange to interchange connections, significant reconstruction of entire previous tolling areas are required. The Design-Builder is responsible for the Toll Plaza removals and those requirements are in other sections of Part 3. Signage packages, Tandem Lot work, pavement repairs and pavement design and construction, Work Zone Traffic Control, TUB removals, and other relevant information are found in other sections of Part 3 – Project Requirement sections, and other Part 7 – Engineering Data Sections. Positive Separation at all Interchanges (required) shall be Concrete Barrier.

All these Interchanges require positive separation and the Authority is requiring reinforced concrete barrier as the positive separation. The TUBS and all Toll Booths shall be removed at all these interchange locations. The existing generators are to be salvaged for the Thruway. The traffic data for these locations can be found in Part 7 – Engineering Data, Section 19. The Work Zone Traffic Control, Section 15 of Part 3 is applicable at all these locations. The signage package associated with transition before and after AETC '~~opens~~goes live" and then after the Toll Booths are removed can be found in Engineering Data, Part 7 - Section 8. The Design-Builder is responsible for the improvements to the proposed legislation routes for Tandems, which are shown in Part 7 - Engineering Data, Section 3. All turning movements shall be improved, where required, to ensure the Tandems can properly remain in the correct travel lanes. The concept plans are not fully engineered however, the plans do show the required/intended number of lanes that are necessary when the interchange work is completed. Those requirements can be found in Engineering Data, Part 7 – Section 18. Refer to Section 12 of Part 3 – Project Requirements for specifics relative to signage, pavement markings and signals (if required). The actual sign sizes and text for the transition and final signage where Toll Booths are eliminated are also found in Engineering Data, Part 7 - Section 8. While the Toll Booths are operational, prior to AETC "going live", work within the Toll Booth areas is governed by Engineering Data, Part 7 – Section 16, which is the number of Toll Booths required to be operational based on time of day. The Design-Builder shall notify the

Authority's Project Manager two (2) weeks prior indicating what Toll Booths require closure based on the Design-Builder's work. The details of work and Work Zone Traffic Control shall be complete and reviewed with Released for Construction stamped and dated at that 2 week notification lead time requirement.

Interchange 23 – This is a complicated short interchange area and has a short merge opportunity. Additional signing to enable motorists to properly align with the lanes leading from the Thruway system to 9W South, 9W North and I-787 is a requirement and responsibility of the Design-Builder. This additional signage shall be placed well enough in advance so travelers know they must move left or right to avoid last minute potential non-safe moves attempting to get into the correct lanes to either access 9W North, South or access I-787 North. In addition, the Thruway has accident issues (rear end accidents) at the slip ramp to 9W South after exiting the Thruway. The Thruway is requiring the slip ramp be extended utilizing NYSDOT property and Authority property on the right side of Route 9W South. The salt shed shall be removed so that the Design-Builder has almost a blank slate to design and construct. Lighting, drainage adjustments, curb, striping, stop bars and any other items that may interfere with the Design-Builder designing and constructing the improvements is the responsibility of the Design-Builder. A preliminary layout (see concept plans) revealed no conflict with utilities (exception light poles, and drainage infrastructure). None of Thruway buildings conflict once the Salt Shed is removed which should be completed no later than September 1, 2019, if not sooner. A preliminary investigation into underground utilities revealed utilities should be deep enough to not prevent the construction of this extended slip ramp. In addition, the Thruway is requiring that the ramp leading to 9W North become a two-lane left turn lane as opposed to the one lane that exists now. Tandem Lot is to be closed and the Tandem Lot shall be removed, then top soiled and seeded.

Interchange 23 also requires the installation of an emergency break in concrete barrier to facilitate the "U-turning" of vehicular traffic should the Thruway close and traffic is queued at the interchange site. Refer to Part 8 for the Special Specification Item 606.9575—25 Median Barrier Gate System (installed). The location of this item shall be (on entering the Thruway) as close as possible to the gore area where North and South ramps split, and the location allows enough area for vehicles to essentially U-turn.

Interchange 23 requires a new signal configuration with the addition of the two (2) lane left turn from the Thruway exit to the 9W North. The Design-Builder is responsible for the design and construction of the complete new signal system with new supports, foundation, and new signals to align properly with all traffic movements, along with new traffic cabinet. See Section 12 for Traffic Signal details.

The two lane left turn shall be striped along with performed pavement symbols. These requirements apply only to the exit ramp intersecting with 9W leaving the Thruway system. Striping on the slip ramp to 9W South and a new stop bar placement at Noonan Lane is also required. All work shall meet current standards.

The Design-Builder shall design the double left turn movement to accommodate current required standard vehicles. The right lane of the double left turn movement shall be designed for a WB-67 vehicle. The requirement to accommodate side by side operation of the design vehicle specified will be considered a non-conforming feature. This occasional vehicle will require some encroachment on the island between the double lefts and the slip ramp to Rte. 9W South. The Design-Builder shall allow such opportunity by providing 10' of additional pavement in the island. Although the striping shall be in accordance with current design standards the encroachment shall be via the provision of additional pavement area. The Authority does not expect vehicles of this size for the following two reasons. The first being the closure of the Exit 23 interchange Tandem lot and the second being the only routes available after proceeding further north on Rte. 9W are intersections with City Streets presenting problems for these types of vehicles.

Interchange 24 – One of the largest Interstate-to-Interstate connections in this project. The uniqueness of this site is the large usage of the Tandem Lot, the necessary legislation proposed to provide safe movement of Tandems to reenter the Thruway system. Due to the anticipated higher speeds through the interchange area the Design-Builder is required to design and construct an acceleration lane for the Tandems so that their entering speeds can be reasonable for entering and merging with I-90 Eastbound traffic. The Design-Builder should pay close attention to the overhead signage and the placement location of the current overhead sign structures. When the interchange is complete of all work the Design-Builder is responsible to ensure the signage is in compliance with the MUTCO. Other Part 3 requirements pertain to this

SECTION 25 DEMOLITION OF TOLL PLAZAS

25.1 SCOPE

The Design-Builder shall demolish Toll Plazas at the following terminus locations: 15 (Woodbury, MP 45.03), B3 (Canaan, MP 17.83), Williamsville (MP 419.69, Lackawanna (MP 430.51), Ripley (MP 494.51) and interchange Locations 23 (Boulevard), 24 (Washington Ave.), 25 (Schenectady), 25A (Duanesburg), 34A (Collamer), 36 (Mattydale), 39 (State Fair), 44 (Canandaigua), 45 (Victor), 46 (Henrietta), 47 (Leroy), B1 (Post Road), B2 (Taconic), 17 (Partial Demolition) (Newburgh), 18 (New Paltz), 19 (Kingston), 20E (Saugerties E.), 20W (Saugerties W.), 21 (Catskill), 21B (Coxsackie), 22 (Selkirk), 26 (Rotterdam), 27 (Amsterdam), 28 (Fultonville), 29 (Canajoharie), 29A (Little Falls), 30 (Herkimer), 31 (Utica), 32 (Westmoreland), 33 (Verona), 34 (Canastota), 35 (Thompson Road),37 (Electronics Parkway), 38 (Liverpool), 40 (Weedsport), 41 (Waterloo), 42 (Geneva), 43 (Manchester), 48 (Batavia), 48A (Pembroke), 49 (Depew), 56 (Blasdell), 57 (Hamburg), 57A (Eden-Angola), 58 (Silvercreek), 59 (Dunkirk), and 60 (Westfield).Standards.

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

25.2 REQUIREMENTS

25.2.1 General

The Design-Builder shall not remove the Toll Booths until the Cashless Tolling System is activated. The removal of the Toll Booths shall be completed in stages and traffic lanes shall be maintained to avoid congestion at the Toll Booths.

The Design-Builder shall demolish the existing Toll Plazas in stages and remove the demolished material. Refer to Section 15 for specifics of Work Zone Traffic Control to avoid traffic congestion.

The Design-Builder shall salvage for the Authority the following items:

- LED canopy lights;
- Lane indicator lights; and
- Drum sign/structures.

The Design-Builder shall relocate the salvaged equipment to a location to be identified by the Authority that will not be more than 10 miles from the demolition site.

25.2.2 Toll Booth Demolition

A. The Toll Booths shall not be removed by the Design-Builder until all electronic cashless tolling is activated. Refer to Part 3 – Project Requirements, Section 15 for specifics on Work Zone Traffic Control.

B. The Design-Builder is responsible at all locations where full Toll Plaza removal is required to provide in the tunnel under those toll plazas to install 2-4 inch conduit capped at both ends for future use by Authority Resources. Upon completion of that installation of the Thruway special specification conduit, the tunnel is to be filled with low strength fill.

C. The Design-Builder is responsible for capping or repairing the highway pavement void after the Toll Booths are removed. The Design-Builder shall design and construct an appropriate reconstructed section of pavement for this voided section as indicated in Part 7 - Engineering Data, Section 14 prior to the necessary normal crown or super elevated highway section (the final pavement highway section for these locations being applied).

D. One week prior to the beginning of the removal of the Toll Booths at each location, the Design-Builder shall notify the Authority's Project Manager so that Thruway personnel can remove tolling equipment. It shall take Thruway personnel a maximum of three (3) days to remove the equipment.

E. If the first Toll Booth removals are not to occur until a time greater than 1 month after the AETC "go live" date than the previous paragraph does not apply as the equipment at all locations shall be removed within that one month period.

F. Prior to Toll Booth removal, all electric and fiber connected to the Toll Booths shall be appropriately terminated at the existing TUB locations by the Design-Builder.

~~25.2.1.1~~25.2.2.1 Exit 17 (Newburgh) Partial Toll Booth Demolition

The only location in this Project that does not require complete Toll Booth removal is Exit 17 (Newburgh). At Newburgh (entry) and Newburgh (exit), one Toll Booth removal per location is required.

Paragraphs A, C, D and E in section 25.2.2 apply for Exit 17 (Newburgh).

~~The Toll Booths shall not be removed by the Design-Builder until all electronic cashless tolling is activated. Refer to Part 3 – Project Requirments, Section 15 for specifics on Work Zone Traffic Control.~~

~~The Design-Builder is responsible at all locations where full Toll Plaza removal is required to provide in the tunnel under those toll plazas to install 2-4 inch conduit capped at both ends for future use by Authority Resources. Upon completion of that installation of the Thruway special specification conduit, the tunnel is to be filled with low strength fill.~~

~~The Design-Builder is responsible for capping or repairing the highway pavement void after the Toll Booths are removed. The Design-Builder shall design and construct an appropriate reconstructed section of pavement for this voided section as indicated in Part 7 – Engineering Data, Section 14 prior to the necessary normal crown or super elevated highway section (the final pavement highway section for these locations being applied).~~

~~One week prior to the beginning of the removal of the Toll Booths at each location, the Design-Builder shall notify the Authority's Project Manager so that Thruway personnel can remove tolling equipment. It shall take Thruway personnel a maximum of three (3) days to remove the equipment.~~

~~If the first Toll Booth removals are not to occur until a time greater than 1 month after the AETC "go live" date than the previous paragraph does not apply as the equipment at all locations shall be removed within that one month period.~~

~~Prior to Toll Booth removal, all electric and fiber connected to the Toll Booths shall be appropriately terminated at the existing TUB locations by the Design-Builder.~~

25.2.2.2 Exit 16 (Harriman) Partial Toll Booth Demolition

Paragraphs A, C, D, E and F in Section 25.2.2 apply for Exit 16 (Harriman).

~~25.2.2~~25.2.3 Hazardous Materials

The Design-Builder shall ensure the removal and disposal is done in accordance with all applicable laws and standards.

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

The Design-Builder shall perform all Work with care so that any materials that are to remain in place, or that are to remain the property of the Authority shall not be damaged. If the Design-Builder damages any materials that are to remain in place or which are to become or to remain the property of the Authority, the

damaged materials shall be repaired or replaced in a manner satisfactory to the Authority at no cost to the Authority.

The Design-Builder shall ensure that no aspects of the Works have a detrimental effect on public safety or the environment.

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

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

~~25.2.3~~25.2.4 Deliverables

A Demolition and Removal Plan, signed and stamped by a Professional Engineer, registered in the State of New York, shall be submitted to the Authority for review and written comment.

25.3 TOLL BOOTH REMOVAL INCENTIVES

The Authority has determined that there is value in the removal of the Toll Booths as soon as possible after the AETC "go live" date. Based on volumes of traffic, incentives are being offered in an attempt to remove the Toll Booths at these higher traffic volume locations. The Interchange and Terminus locations involved and the associated incentives are shown below:

Location	AADT	Incentive
Interchange 24	≈ 75,600	$1,000,000
Williamsville	≈ 54,200	$720,000
Lackawanna	≈ 49,200	$655,000
Interchange 25	≈ 40,300	$535,000
Interchange 45	≈ 36,800	$490,000
Canaan	≈ 23,600	$315,000
	Potential Incentives	$3.715 M

To be eligible for the incentive payment the following conditions have to be met:

1. The final permanent alignment and lane configurations shall be in place (travel lanes and shoulders) and shall remain in place for the winter months until March 15, 2021
2. Positive separation shall be in place, either permanent or temporary concrete barrier, for the median and right side to channelize traffic through the Toll plaza area.
3. Pavement repairs are complete
4. Construction of temporary asphalt pavement where Toll Booths were removed and meet the existing Toll plaza elevations of roadway surface.
5. Temporary striping and temporary directional signage shall be in place. The temporary striping can be reflectorized paint, or epoxy.
6. The work at the individual locations shall be complete by January 15, 2021.

The temporary conditions defined above shall comply with Standard Specifications.

25.4 TOLL BOOTH REMOVAL DATE

The Design-Builder is responsible to have all Toll Booths removed and the final lane configurations in place by August 4, 2021. Failure to meet this dateline shall result in a loss of the project completion incentive of one calendar day incentive ($20,000)/per calendar day late/per each Toll Booth removal location. If the Design-Builder is not pursuing the incentive this value constitutes the liquidated damages associated with not meeting the defined deadline date.

SECTION 26 COMMUNICATIONS BUILDINGS

26.1 SCOPE

The Design-Builder shall design and construct a Communications Building and Building Foundations at each Gantry location and provide three paved parking spaces adjacent to each Communications Building.

The Design-Builder shall install all conduits and electrical service for electrical power to the Communications Buildings and the Gantries..

The Design-Builder shall provide backup diesel powered generators capable of providing a minimum of 96 hours of continuous operation of Cashless Tolling Facilities.

The Design-Builder shall install all Fiber Optic inner-duct to Communication Buildings and Gantries for Fiber Optic cable to be provided and installed by Adesta.

The Design-Builder shall install all equipment cabinets and mounting components in the Communications Buildings for the Cashless Tolling Equipment to be provided and installed by Kapsch.

The Design-Builder shall be responsible for designing and implementing the structural, mechanical, electrical and plumbing (the "SMEP") and the fire and life safety aspects of the design in accordance with this Project Requirement and ensure that on-site / construction radio frequency device(s) shall not interfere with the Authority's toll collection system;

26.2 STANDARDS

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

26.3 REQUIREMENTS

Each Communication Building shall meet all code requirements and shall be a minimum of 21 ft. X 21 ft. The Design-Builder shall be responsible for coordinating with the Authority via the Authority's Project Manager to ensure that the relevant design requirements of the Authority are met.

The Design-Builder shall be responsible for providing electric service to the Communications Building. Coordination and payment with and to the Electric Company/Supplier for providing electrical service, power pole placement, or other necessary work will be the responsibility of the Design-Builder, and then reimbursed by the Authority through the draw down Force account item.

The electric service to the Communications Building shall be 225-amp service from their selected pole to the interior of the Communications Building entering through the foundation up into the backside wall to the rack. Power receptacles shall be provided on ceiling to support the cashless tolling and network equipment.

A single lane paved access driveway with three (3) paved parking spots shall be provided. Paved ~~V~~vehicle access to within 15 ft. of each communication building door shall be provided as well so that equipment can be unloaded. The pathway from the vehicle access end to the Communication Building door shall be paved as well (~15').

Communications Buildings are critical to the receipt of correct tolling revenue, similar to the mainline gantries, mini-gantry, smaller communication buildings at the ORT Exits and thus require traffic

protections. The guiderail protection system is a function of current standards and based on the placement of the Communication Buildings. Regardless, though, a method of protection is required even if the Communication Building were outside the clear zone.

Placement of the Communication Building in the median is acceptable, but in addition to the other requirements of this RFP relative to the Communication Buildings, a deceleration ramp is required for any median located Communication Building.

All mainline Communication Buildings and Terminus location Communication Buildings that are new shall require foundations where the footings extend below the frost line or 48 inches, whichever is greater. The foundations, as a minimum, shall resemble that of a "crawl space" and otherwise meet all building codes and standards.

The Design-Builder is responsible for supplying and installing fiber optic inner-duct from an Authority specified hand-hole/splice location to and through the Communication Building foundation and concrete floor to a junction box located 4 to 5 feet above finished grade and located on the interior side of the exterior wall (but not the front exterior wall). The Design-Builder is also responsible for transitioning the inner-duct to interior fire rated inner-duct at the interior wall junction box to the service rack supplied by the Design Builder via a ladder rack.

Adesta shall pull and install the fiber optic cable line within the Design-Builders installed inner-duct. The inner-duct installation shall be laid straight without multiple bends. Bends shall only be allowed for change in direction points. The inner-duct shall be laid straight within the trench (no small bends or ripples in the conduit). Adesta shall supply, install and test the fiber for full functioning and connectivity. Adesta shall connect/splice the fiber into the Thruway's fiber backbone. The Design-Builder is responsible for back filling the trenches when Adesta completes the tests of fiber connection from the splice locations to the racks.

Refer to the document "Fiber Optic Communications for Mainline Gantries" provided separately to each Design-Builder for additional requirements.

Design-Builder shall be responsible for all the outlets, lighting, HVAC system (for climate control) and other misc. work as required by the building codes as stated in Section 1 of Part 3.

The Design-Builder is also responsible for the installation of the conduit from the Communication Building to the gantry foundation and up out of the foundation to the center of the Gantry vertical support. The conduit should end 12 inches above the top of the Gantry foundation.

Kapsch is responsible for all the cabling (supply and install) from the Communications Building to all pieces of equipment on the gantry. Each piece of equipment has a separate independent run of cabling (cameras/illuminators/nVDC unit/antenna/lasers). The independent cabling runs from Communication Building to Gantry equipment (total length) shall not exceed 250 feet including service loops.

Available hand-hole/splice locations within Gantry limits are provided in the document "Fiber Optic Communications for Mainline Gantries" provided separately to each Design Build team.

26.3.1 Mechanical Requirements

26.3.1.1 Indoor Air Quality

The Design-Builder shall minimize to the fullest extent possible the use of materials that emit VOCs and similar pollutants.

26.3.1.2 Mechanical Ventilation

As a means to monitor air quality, carbon monoxide monitoring systems shall be installed within the ventilation systems.

26.3.1.3 Mechanical Equipment and Systems

CASHLESS TOLLING

TA 19-1, Contract D800002

CONTRACT DOCUMENTS
PART 5

SPECIAL PROVISIONS

Addendum #2 March 22, 2019

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SP-1. SPECIAL PROVISION TO SECTION 100 OF NYSDOT STANDARD SPECIFICATIONS CONSTRUCTION AND MATERIAL AND THE AUTHORITY SECTION 100 OF THE STANDARD SPECIFICATIONS CONSTRUCTION AND MATERIALS

Delete the entire Section 100 of the New York State Department of Transportation and the New York State Thruway Authority's Standard Specifications Construction and Materials in effect as of the Proposal Due Date. Replace Section 100 of the NYSDOT Standard Specifications Construction and Materials and Thruway Authority's by Part 2, DB § 100.

SP-2. SPECIAL PROVISION TO SECTIONS 200 THROUGH 699 OF THE NYSDOT STANDARD SPECIFICATIONS CONSTRUCTION AND MATERIAL AND APPLICABLE NYSDOT/AUTHORITY SPECIAL SPECIFICATIONS

The following amendments apply to Sections 200 through 699 inclusive of the New York State Department of Transportation Standard Specifications Construction and Materials in effect as of the Proposal Due Date, and any NYSDOT/Authority Special Specifications referenced in Part 3, Project Requirements or which otherwise might be required during the design and construction of the Project, with the exception of Section 800 Specifications contained in Part 8 – Special Specifications:

A. All contact with Authority staff or Divisions except for personnel assigned to the Project shall be through the Authority's Project Manager.

B. References to "plans" or "contract plans" shall mean "Design Plans" prepared by the Design-Builder.

C. There will be no measurement for payment except for Unit Priced items specifically shown in the Price Proposal. All Work will be paid on the basis specified in Part 2 – DB § 109.

D. All references to "Section 100" Specifications shall mean equivalent references to Part 2 - DB § 100 Specifications.

E. Delete the following phrases:

   1) "deemed necessary by the Engineer";

   2) "to the satisfaction of the Engineer";

   3) "as determined by the Engineer";

   4) "subject to the approval of the Engineer";

   5) "as specified by the Engineer";

   6) "approved by the Engineer";

   7) "ordered by the Engineer";

   8) "established by the Engineer";

   9) "acceptable to the Engineer";

   Or similar phrases denoting instruction by or consent from the Engineer and replace with "as shown on the Design Plans and/or Project Specifications released for construction per DB § 111-12".

If the relevant information is not shown on the Design Plans or covered in the Project Specifications, the Design-Builder shall have the Designer change the Design Plans and/or Project Specifications to incorporate the missing information.

F. Delete references to “payment lines” and replace with “lines shown on the Design Plans.”

G. References to “Proposal” or “proposal” shall be interpreted to mean the “Contract Documents”;

H. Unless specifically stated otherwise in the Contract Documents, sampling and testing specified to be done by the Engineer or other Department/Authority staff, shall be performed by the Design-Builder’s Construction Quality Control (QC) staff;

I. Working Plans or working drawings, as defined in Part 2 – DB § 101-3, shall be reviewed per DB § 111-12;

J. “Submission” or “submittal” used in the design shall be subject to review and Authority acceptance per DB § 111-12;

K. All references to “the Engineer” or “the Engineer-in-Charge” shall mean the Authority’s Project Manager or designated representative;

L. All references to “Contractor” shall mean “Design-Builder”;

M. References to: “Deputy Chief Engineer Design, Construction, Technical Services”; any Division in Main Office NYSDOT; “Regional Director”; “Regional Design Engineer”; “Materials Engineer”; “Construction Engineer”; or any other similar title and role shall mean the Authority’s Project Manager or a designated representative;

N. References to “Department/Authority Engineering Geologist” shall have the meaning defined in Part 2 DB §101-3;

O. References to “Department/Authority Geotechnical Engineer” shall have the meaning defined in Part 2 DB §101-3;

P. References to “preconstruction meeting” shall mean “pre-work conference”;

Q. There shall be no quality payment adjustments under this Contract;

R. <u>In each Specification</u> delete the sections titled “Method of Measurement” and “Basis of Payment”;

S. Add the following to Section 648 – Subsurface Explorations:

“The Design-Builder shall be responsible to determine the nature, extent, and locations of subsurface explorations needed to obtain data and support subsequent analysis, design, and construction. The Design-Builder shall also be responsible for determining the adequacy of any subsurface exploration data provided as reference documents by the Authority to support its analyses, design, and construction and to supplement such data provided by the Authority as reference documents as the Design-Builder deems necessary.

“In planning and conducting its subsurface explorations, the Design-Builder shall comply with the technical requirements of Section 648, unless the Authority agrees otherwise. The Design-Builder is not required to comply with the administrative requirements specified in Section 648; if any”.

T. Delete Section 697 – Field Change Payment;

U. Delete Section 698 – Price Adjustments; and

V. Delete Section 699 – Mobilization.

SP-3. CRITICAL PATH METHOD SCHEDULE

3.1 DESCRIPTION

The schedule submitted in accordance with DB Section 108-1.2 shall consist of preparing, maintaining and submitting a Progress Schedule using the Critical Path Method on Primavera P6 software, or newer release, which demonstrates complete fulfillment of all work including engineering design, construction and administration of the Contract. All work to prepare the Progress Schedule shall be performed using the scheduling software application provided by the New York State Department of Transportation on network servers and accessed through the Internet with NYSDOT provided user accounts. The Design-Builder shall regularly revise and update the Progress Schedule, and use it in planning, coordinating, and performing all work. Schedule activities shall accurately depict the entire scope of work to be performed to complete the project including, but not limited to, all work to be performed by the Design-Builder, consultants, subcontractors, fabricators, suppliers, the Authority, and others, contributing to the project.

1. To maintain the progress schedule, the successful Best Value Design-Builder's CPM electronic CD will be uploaded to the Authority's consultant's primavera P6 Software where Quality Assurance and monitoring for compliance will be performed and relayed to the Authority.

3.2 DEFINITIONS

Activity - A discrete, identifiable task or event that usually has an expected duration, has a definable Start Date and/or Finish Date, and can be used to plan, schedule, and monitor a project.

Activity, Controlling - The first incomplete activity on the critical path.

Activity, Critical - An activity on the critical path.

Actual Start date - At the activity level, the Actual Start date represents the point in time that meaningful work actually started on an activity.

Actual Finish date - At the activity level, the Actual Finish date represents the point in time that work actually ended on an activity (Note: in some applications areas, the activity is considered "finished" when work is "substantially complete."); at the project level, the Actual Finish date represents the point in time that the Design-Builder completes all work on the Project and it is accepted by the Project Manager.

Baseline Progress Schedule - The Progress Schedule submitted by the Design-Builder that shows the plan to complete the Contract Work. The Baseline Progress Schedule represents the Design-Builder's plan at the time of Notice to Proceed for completing the Project.

Completion Date, Contract - The date specified in the Contract for completion of the Project or a revised date resulting from properly executed time extensions.

Completion Date, Scheduled - The date forecasted by the Progress Schedule for the completion of the Project.

Constraint - A schedule restriction imposed on the Start or Finish date(s) of an activity that modifies or overrides an activity's relationships.

Contemporaneous Period Analysis Method – A technique for evaluating schedule delays or time savings. The analysis period for the purpose of these provisions shall be monthly in each regular progress update to the schedule.

Critical Path – The critical activities shall be those activities being on the longest path. In a project network diagram, the series of activities which determines the earliest completion of the Project.

Critical Path Method (CPM) – A network analysis technique used to predict project duration by analyzing which sequence of activities (which path) has the least amount of scheduling flexibility (the least amount of float). A scheduling technique utilizing activities, durations, and interrelationships/dependencies (logic), such that all activities are interrelated with logic ties from the beginning of the Project to the completion of the Project.

Data Date – The date entered in the Project Details, in the Dates tab, which is used as the starting point to calculate the schedule. For the Baseline Progress Schedule submission the Data Date shall be the Notice to Proceed Date; for Monthly Progress Schedule submissions, the Data Date shall be the date up to which the Design-Builder is reporting progress (generally the last work day for the month, and for Weekly Status Reports the Data Date shall be the Saturday of that week). Everything occurring earlier than the Data Date is "as-built" and everything on or after the Data Date is "planned."

Deliverable – Any measurable, tangible, verifiable outcome, result, or item that must be produced to complete a project or part of a project. Often used more narrowly in reference to an external deliverable, this is a deliverable that is subject to approval by the Authority.

Design-Builder's First Day of Construction Work – The day the Design-Builder starts field work within the highway Right-of-Way, which is entered as a Start milestone activity in the schedule.

Design-Builder's Last Day of Work – The last day of physical work in the field, and the Design-Builder has demobilized (no longer has any presence within the highway right-of-way).

Design-Builder Work Day - A calendar day scheduled for active prosecution of Contract work by the Design-Builder or the Design-Builder's representative.

Draft Baseline Progress Schedule – An optional schedule submission that reflects an outline of the schedule format and content proposed by the Design-Builder's Project Scheduler to comply with the schedule provisions in the contract to solicit early comments by the Project Manager, prior to the submittal of complete Baseline Progress Schedule.

Duration, Original - The original estimated number of work days (not including holidays or other non-working periods) in which the work task associated with the activity is expected to be performed. (The number of calendar days may be different based on the calendar assigned to the activity.) For certain activities such as concrete curing, or others approved by the Project Manager, the calendar shall not reflect non-work days.

Duration, Remaining - The estimated time, expressed in work days (not including holidays or other non-working periods), needed to complete an activity that has started but has not finished.

Early Completion Schedule - A progress schedule will be considered an early completion schedule when the schedule submitted by the Design-Builder indicates a completion date that is earlier than the specified Project Completion Date, or when the Finish date of any Interim Milestone work activity is earlier than the date specified in the Contract. This includes, but is not

limited to, activities subject to Incentive/Disincentive provisions and/or specific Liquidated Damages provisions, and Lane Rental activities.

Early Dates – The earliest date an activity can start or finish based upon logic and durations. Calculated by the software application when scheduling the Project.

Enterprise Project Management Database (EPMD) – The NYSDOT's database of construction project Progress Schedules.

Final Baseline Progress Schedule - The plan, accepted by the Authority, against which the Design-Builder's progress is measured. The Final Baseline Progress Schedule represents the plan, after Notice to Proceed is issued to the Design-Builder, of how procurement, design and construction is expected to proceed. Once the Final Baseline Progress Schedule is accepted by the Authority's Project Manager it is saved and used as a basis to compare against Progress Schedules Updates.

Float Suppression - Utilization of zero free float constraints which allows an activity to start as late as possible by using all its' available free float. This technique allows activities to appear more critical than if the activity's total float was based on early dates. Assigning zero free float prevents true sharing of total float between Authority and the Design-Builder. Utilization of overly generous activity durations and overly restrictive calendar non-working periods are also considered to cause float suppression.

Float, Free - The amount an activity can slip without delaying the immediate successor activities. Free Float is the property of an activity and not the network path.

Float, Total - The amount of time an activity (or chain of activities) can be delayed from its early start without delaying the Project Completion Date. Total Float is calculated and reported for each activity in a network, however, Total Float is an attribute of a network path and not associated with any one specific activity along that path.

Fragnet – A subdivision of a project network diagram usually representing some portion of the Project.

Global data – Data classified by Oracle Primavera software as Global, including Project Codes, Global Activity Codes, Global Calendars, Resource Calendars, Global Filters, Resources, Global Reports, User Defined Fields and Unit of Measure.

Initial Baseline Progress Schedule - The Progress Schedule submitted by the Proposer that shows the plan to complete the Contract Work. The Initial Baseline Progress Schedule represents the Design-Builder's plan at the time of Proposal Due Date for completing the Project.

Key Plans - Key Plans are graphic representations made by the Design-Builder's Project Scheduler on paper copies of the appropriate Contract plan sheets that reflect the Design-Builder's planned breakdown of the Project for scheduling purposes to efficiently communicate the Design-Builder's activity coding scheme to State scheduling staff. The key plans prepared by the Design-Builder shall clearly define the boundaries of the work for each designated Area, the operations contained in various Stages of work, and work in the Work Zone Traffic Control (WZTC) Phases. The alphanumeric codes on the key plans shall match the code values for the activity code "Area", "Stage", and "WZTC Phase" in the Progress Schedule.

Late Dates –The latest an activity can start or finish without delaying the day of completion.

Longest Path - The sequence of activities through the Progress Schedule network that establishes the Scheduled Completion Date

Look-Ahead Schedule – A three week time segment generated from the accepted Progress Schedule that shows the actual work progressed during the previous one week and forecasts the work planned for next two week period following the Data Date, and includes any major materials to be delivered and any lane closings or anticipated shifts in WZTC.

Milestone – An activity with zero duration that typically represents a significant event, usually the beginning and end of the Project, milestones set forth in the Contract, construction stages, a major work package, or the Contract interim time-related clauses.

Narrative Report - A descriptive report submitted with each Progress Schedule.

Open End - The condition that exists when an activity has either no predecessor or no successor, or when an activity's only predecessor relationship is a finish-to-finish relationship or only successor relationship is a start-to-start relationship.

Predecessor - An activity that is defined by Schedule logic to precede another activity. A predecessor may control the Start Date or Finish Date of its successor.

Progress Schedule – A general Primavera P6 Schedule as defined by this Special Provision.

Progress Schedule Delay - An event, action, or other factor that delays the critical path of the Progress Schedule and extends the time needed for completion of the construction project.

Progress Schedule Revision – Revisions to the Progress Schedule ensure it accurately reflects the current means and methods of how the Project is anticipated to progress, including modifications made to any of the following items: (a) changes in logic connections between activities; (b) changes in constraints; (c) changes to activity descriptions; (d) activity additions or deletions; (e) changes in activity code assignments; (f) changes in activity production rates; and (g) changes in calendar assignments.

Progress Schedule Update – Changes to the Progress Schedule that reflect the status of activities that have commenced or have been completed, including the following items: (a) Actual Start date and or Actual Finish date as appropriate; (b) Remaining Duration for activities commenced and not complete; and (c) Suspend or Resume dates for activities commenced and not complete.

Project Scheduler – The person that is responsible for developing and maintaining the Progress Schedule.

Projects Planned Start Date – The date entered in the Project Details, in the Dates tab, that reflects the Design-Builder's planned start of work (based on Contract requirements, and reasonable expectation for a Notice to Proceed) at the Proposal Due Date.

Recovery Schedule – A schedule depicting the plan for recovery of significant time lost on the Project. This separate CPM schedule submission shall provide the resolution and include appropriate changes in network logic, calendar adjustments, or resource assignments.

Relationships - The interdependence among activities. Relationships link an activity to its predecessors and successors. Relationships are defined as:

Finish to Start - The successor activity can start only when the current activity finishes.

Finish to Finish – The finish of the successor activity depends on the finish of the current activity.

Start to Start – The start of the successor activity depends on the start of the current activity.

Start to Finish – The successor activity cannot finish until the current activity starts.

Scheduling/Leveling Report – The report generated by the software application when a user "Schedules" the project. It documents the settings used when scheduling the project, along with project statistics, errors/warnings, scheduling/leveling results, exceptions, etc.

Substantial Completion - the day, determined by the Project Manager, when all of the following have occurred:

1. The public (including vehicles and pedestrians) has full and unrestricted use and benefit of the facilities both from the operational and safety standpoint, and
2. All safety features are installed and fully functional, including, but not limited to, illumination, signing, striping, barrier, guard rail, impact attenuators, delineators, and all other safety appurtenances, and
3. Only minor incidental work, replacement of temporary substitute facilities or correction or repair remains for the Physical Completion of the Contract, and
4. The Design-Builder and Project Manager mutually agree that all work remaining will be performed with short term lane closures to minimize delays, disruption, or impediment to the traveling public. No overnight lanes closures or sidewalk closures will be allowed.

Successor - An activity that is defined by Schedule logic to succeed another activity. The Start Date or Finish Date of a successor may be controlled by its predecessor.

Time Impact Analysis (TIA) – A technique to demonstrate the comparison of a time impact of a Progress Schedule revision prior to a change in the Contract work, against the current accepted Progress Schedule. Also known as a "What-If" analysis. A Time Impact Analysis is used to evaluate proposed changes to future work activities in the schedule.

Weekly Status Report – The report generated weekly from the updated Progress Schedule in an electronic Adobe Acrobat PDF format that reflects a Data Date for that Progress Schedule Update period. The report shall be formatted to fit ANSI Size D paper (24 inch x 36 inch) (610 mm x 914 mm), listing all work activities from the Data Date to Project Completion, using the NYSDOT Status Report Layout, sorted by Early Start Date, Total Float in increasing order, showing the Activity ID, Activity Description, Original Duration, Remaining Duration, Total Float, Early Start date, Early Finish date, Start date, Finish date and Calendar ID.

Work Breakdown Structure (WBS) - A deliverable-oriented grouping of project elements, which organizes and defines the total scope of the Project. Each descending level represents an increasingly detailed definition of project components or work packages.

Work Package - A deliverable at the lowest level of the work breakdown structure. A work package contains activities.

Work Days - A calendar day (Monday through Friday) on which State offices are open to the public for business. State recognized public holidays are not Work Days**.** Work Days are days scheduled for the active prosecution of Work activities by State staff or the State's representatives.

New York State Holidays	
New Year's Day	**January 1**
Martin Luther King Day	**3rd Monday in January**
President's Day	**3rd Monday in February**
Memorial Day	**Last Monday in May**
Independence Day	**July 4th**
Labor Day	**1st Monday in September**
Columbus Day	**2nd Monday in October**

Veteran's Day	**November 11th**
Thanksgiving Day	**4th Thursday in November**
Christmas Day	**December 25th**

If the holiday occurs on a Saturday, it will be observed the Friday before. If the holiday occurs on a Sunday, it will be observed the Monday after.

3.3 CONSTRUCTION DETAILS

3.3.1 Project Scheduler

The Design-Builder shall designate an individual, entitled the Project Scheduler, who will develop and maintain the Progress Schedule. The Project Scheduler shall be present at the Prestart Schedule Meeting, prepared to discuss, in detail, the proposed sequence of work and methods of operation, and how that information will be communicated through the Progress Schedule. The Project Scheduler shall attend all meetings, or receive meeting minutes that outline schedule related issues of those meetings, which may affect the CPM schedule, including but not limited to those between the Design-Builder and their consultants, subcontractors and between the Design-Builder and the Department. The Project Scheduler shall be knowledgeable of the status of all aspects of the work throughout the length of the Contract, including but not limited to: original Contract work, additional work, new work, and changed conditions of work.

3.3.2 Scheduling Software

The NYSDOT will provide Primavera Software (P6), or newer releases for use by the Authority's Project Manager or designee to review the schedules submitted by the Design-Builder upon determination of the Best Value the successful Design-Builder's CD electronic version of the CPM baseline shall be located on the P6 software located at the Authority's consultant site. The Design-Builder shall be notified relative to what step needs to be followed to access the new consultant's website, how to update, and how to store all Progress Schedules. Once those instructions are provided, the Design-Builder shall submit Request for Access to the Authority's project manager for each proposed Primavera user. Access requests shall be provided by the Authority's Project Manager.

A schedule template will be provided to the Design-Builder for developing their progress schedule.

The Design-Builder shall further develop, update, and revise the Baseline Progress Schedule using Primavera P6 software that has been loaded on the Department's network servers and the Design-Builder shall store all Progress Schedule files on the Department's network servers.

Access rights within the Primavera database will be created by the NYSDOT for initial submittal. The Authority or designee will be the sole entity to modify the EPS structure, the OBS Structure, Project Codes, Global Activity Codes, Global Calendars, User Defined Fields, Security Profiles, Admin Categories, and Admin Preferences.

TABLE 1 – SCHEDULE FILENAME CONVENTION			
Progress Schedules	**1st Version**	**2nd Version**	**3rd Version**
Draft Baseline Progress Schedule	D26####-1DB	D26####-2DB	D26####-3DB
Baseline Progress Schedule	D26####-1BPS	D26####-2BPS	D26####-3BPS
Final Baseline Progress Schedule	D26####-1FB	D26####-2FB	D26####-3FB
Month #1 Progress Schedule Submission	D26####-1SU1	D26####-2SU1	D26####-3SU1
Month #2 Progress Schedule Submission	D26####-1SU2	D26####-2SU2	D26####-3SU2
As-Built Progress Schedule (Last Progress Schedule)	D26####-1AB	D26####-2AB	D26####-3AB
1st Time Impact Analysis	D26####-1TIA1	D26####-2TIA1	D26####-3TIA1
1st Recovery Schedule	D26####-1RS1	D26####-2RS1	D26####-3RS1

Primavera software and schedule data on the Authority and Consultant EPMD will generally be available for the Design-Builder's use at all times unless system maintenance (i.e. backups, upgrades, etc.) is being performed. The Design-Builder shall export copies of Project Progress Schedules, Recovery Schedules, and TIA Schedules, after data modifications have been made as their backup of these submissions. In the event a Design-Builder's authorized user cannot access the software from 6AM to 10PM Monday through Friday, the Design-Builder shall provide written notification to the Authority's Project Manager.

Project schedules are developed from the Design-Builder's knowledge of the Project, and the means and methods represented in those schedules are based on the Design-Builder's understanding of the Contract documents, and the Design-Builder's past experience, which are unique to the Design-Builder. Schedule activity data and logic are therefore the intellectual property of the Design-Builder and will not be made available to other Design-Builders. All other schedule data, and all Enterprise data residing on the Consultant's network servers, are the sole property of the Authority.

3.3.3 Prestart Schedule Meeting

The Design-Builder shall contact the Authority's Project Manager within ten (10) business days of Contract Notice to Proceed to schedule a Prestart Schedule Meeting. The purpose of this meeting is to discuss essential matters pertaining to the satisfactory scheduling of Project activities, and to resolve any known questions regarding interpretation of the contract requirements for this work.

The Project Scheduler shall be prepared to discuss the following:

1. The proposed hierarchal Work Breakdown Structure (WBS) for the Progress Schedules.
2. The proposed Project calendars.
3. The proposed Project activity codes, and various code values for each activity code.
4. Specifics of any contract Time-Related Clauses (Incentive/Disincentive, Liquidated Damages, Lane Rental, etc.);
5. The Design-Builder's schedule methodology to be employed, proposed work sequence and any proposed deviations from the contract plans with respect to Staging or Work Zone Traffic Control phasing.
6. Copies of the Key Plans shall be provided at the meeting.

7. The factors that the Design-Builder determines to control the completion of the Project and any milestone activity completion dates contained therein.
8. The Project Scheduler shall provide an outline for the content of the Narrative report for future Progress Schedule submissions.
9. Schedule submission protocol for Progress Schedule submissions.

The Design-Builder shall submit to the Authority's Project Manager for review one week prior to the Prestart Schedule Meeting a copy of the Key Plans, a print out of the proposed Work Breakdown Structure, a print out of each of the proposed Project Calendars showing the Work days versus non-work days and hours per day, and a list of the Code Values for each Project Activity Code proposed to be used in the schedules.

The Authority's Project Manager or designee will be available to answer questions regarding scheduling, including: the availability of NYSDOT supplied electronic file(s) containing sample project schedule information, sample progress schedule narratives, Special Notes for CPM Scheduling, and required standard format for CPM Progress Schedules for contract work. The Design-Builder shall schedule meetings as necessary with the Authority's Project Manager to discuss schedule development and resolve schedule issues, until the Final Baseline Progress Schedule is accepted by the Authority's Project Manager.

The Design-Builder is encouraged, but not required, to submit a Draft Baseline Progress Schedule that demonstrates a sample of how the Project Scheduler's proposed alphanumeric coding structure and the activity identification system for labeling work activities in the CPM progress schedule will conform to the detailed requirements of this Special Provision. The review and comment by the Authority Project Manager of the sample schedule should assist the Project Scheduler in assuring the first submittal of the Baseline Progress Schedule will be in general conformance with the requirements of this Special Provision and other contract requirements, and that major rework of the Baseline Progress Schedule will not be required. This submittal may be made anytime following the Contract Award. Critical items for this review should include but are not limited to: the proposed WBS for subsequent Progress Schedules; the proposed Project Calendars; project Planned Start date; major milestone activities (i.e. - Award, Notice to Proceed, Project Completion); and between fifty to one hundred summary activities for the major work deliverables of the Contract (i.e. – Design bridge 1, design bridge 2, construct bridge 1, construct bridge 2, etc.) that have assigned Activity Ids, Activity Descriptions, Activity Durations, Predecessors, Successors, and Activity Relationships. These summary activities will be broken down into, or supplemented with, individual work activities for the baseline submission. To the extent practicable, the Draft Baseline Progress Schedule should include administrative and procurement activities to be accomplished during the Contract; planned submittal, review, and approval dates for shop drawings, working drawings, fabrication drawings, and Design-Builder supplied plans, procedures, and specifications.

Any submission of a Draft Baseline Progress Schedule should be accompanied by a written Narrative that provides details of the Calendar assignments of work days versus non-working days, outlines the sequence of planned operations to complete the Project Work, and provides the proposed Activity Codes and Code values to be assigned to activities in future submissions of Project Progress Schedules. The Authority's Project Manager will review the logic diagram, coding structure, activity identification system, and Narrative; and provide comments for required changes by the Project Scheduler for implementation in the submission of the Baseline Progress Schedule. The Authority's Project Manager will provide written comments on major deficiencies within five (5) Work Days of receipt.

3.3.4 Progress Schedule

3.3.4.1 General

In addition to the attributes of the Progress Schedule provisions as set forth in §108-01, the Design-Builder shall prepare, furnish, and maintain a computer-generated Progress Schedule using the Critical Path Method (CPM) utilizing Primavera scheduling software on the Department's network servers. The CPM Progress Schedule shall be prepared based on the principles defined by the latest issue of the Construction Planning & Scheduling Manual published by the Associated General Contractors of America, except where superseded by the Contract documents such as the Regional CPM Special Notes (if applicable) and this Special Provision.

The Design-Builder and the Authority shall use the Progress Schedule to manage the Work, including but not limited to the activities of the Design-Builder, subconsultants, subcontractors, fabricators, the Authority, other involved State agencies and authorities, other entities such as utilities and municipalities, and all other relevant parties.

No work other than installation of the Engineer's Field Office, mobilization, procurement and administrative activities, installation of construction signs, installation of erosion and pollution protection, clearing and grubbing, field measurements, and survey and stakeout will be permitted to start until the Baseline Progress Schedule has been submitted to the Authority's Project Manager, and the Authority's Project Manager determines there are no deficiencies consistent with those identified in paragraph 5.3.5.1.

The Design-Builder will be the sole entity allowed to physically modify the following data within the Progress Schedule: activity IDs; activity descriptions; activity durations; relationships between activities; successors and predecessors, actual start and actual finish dates of activities; planned start and planned finish dates of activities; and activity resources (with the exception that activities assigned resources labeled to reflect Authority personnel may be changed to reflect specific individuals, or job roles, within the Authority).

The Authority may modify certain data associated with the Progress Schedule to ensure conformance to the Authority's Consultant Project Management standard schedule format. This means that the Authority's Consultant may: create additional layouts, filters and reports; create and edit additional user defined custom data fields; assign Project Codes; add and assign additional project Activity Codes; add and assign additional Cost Account Codes; add and assign additional Resource Codes; enter data in Notebook tabs; modify calendar ID's (although not the calendar itself); etc.; that do not alter the established activities or schedule logic of the Design-Builder. The Authority's Project Manager will communicate to the Design-Builder the types and scope of changes planned to be made to the Progress Schedules prior to the implementation of those changes. The Design-Builder shall not delete or modify any schedule data entered by the Authority without prior approval by the Authority's Project Manager. The schedule data added by the Authority shall be incorporated into future schedule submissions of the Design-Builder.

The Design-Builder shall develop the Progress Schedule using, to the maximum extent practicable, the Global Activity Codes. Any schedule "Layouts", "Filters" and "Report" formats that the Design-Builder develops for the various Progress Schedules submissions to the Authority's Project Manager shall be saved and made available to all other users of the Project Schedule with a name that includes the contract D#.

The Authority may make copies of the Progress Schedules to perform 'what-if' type analysis, which may involve any type of modification to those copies of the schedules.

The purpose of the Progress Schedule, and scheduling provisions in the contract, shall be to:

- Ensure that the Design-Builder and the Authority have a detailed plan and resources to complete the Project in accordance with contract time requirements;
- Provide a means of monitoring the progress of the Work;
- Aid in communication and coordination of activities among all affected parties;
- Analyze the effect of changed conditions on any milestone dates or on the Project Completion Date;
- Analyze the effect of change orders for extra work or deductions, and unanticipated delays, on the Project Completion Date;
- Establish a standard methodology for time adjustment analysis based on the principles of the Critical Path Method of scheduling, to analyze delays and resolve construction disputes concerning time;
- Determine appropriate extensions or reductions of Contract Time.

In scheduling and executing the Work, the Design-Builder shall:

a) Sequence the Work commensurate with the Design-Builder's abilities, resources and the Contract documents. The scheduling of activities is the responsibility of the Design-Builder.

b) Ensure that Progress Schedules prepared by the Project Scheduler for submission to the Authority is in compliance with the Contract. The intent should be that Schedule submissions and accompanying Narratives are timely, complete, accurate, and in compliance with the Contract.

c) Communicate all Contract changes, and decisions or actions taken by the Design-Builder and all sub-consultants, subcontractors, fabricators, etc., that effect the Progress Schedule to the Project Scheduler in a timely manner to allow appropriate development, maintenance, and update of the Progress Schedule.

d) Include all Work contained in the Contract and all Work directed in writing by the Authority Project Manager. Work activities directed by the Authority Project Manager to be added to the Contract shall be included in the next Monthly Progress Schedule submission.

e) Assure that Progress Schedule Updates reflect the actual dates that Work activities started and completed in the field.

f) Break a schedule activity into multiple activities to reflect a discontinuity in the Work if a work activity is suspended in the field and restarted at a later date, and the break between when the Work was suspended to when it was resumed is significant compared to the original activity duration.

g) Ensure the Progress Schedule contains all work constraints and Milestones defined in the Contract.

h) Schedule the Work using such procedures and staging or phasing as required by the Contract. Work designated as part of separate stages may be performed concurrently with other stages where allowed by the Contract or where approved by the Authority.

Failure by the Design-Builder to include any element of work required by the Contract in the accepted Progress Schedule does not relieve the Design-Builder from its responsibility to perform such work.

Should the Design-Builder choose to show activities in the schedule that reflects their plan of Work prior to the Contract Award, the Authority does not incur any liability and such Work being performed between the Best Value Designers and the Contract Award Date shall be considered at risk work.

Errors or omissions on Schedules shall not relieve the Design-Builder from finishing all work within the time limit specified for completion of the Contract.

If the Design-Builder fails to comply with the provisions of this Special Provision, the Authority's Project Manager may suspend payment for any Contract Work.

3.3.4.2 **Baseline Progress Schedule**

a) The Design-Builder shall ensure the Schedule accurately reflects the proposed approach to accomplish the work outlined in the Contract documents and conforms to all requirements of this Special Provision. The Baseline Progress Schedule shall show all the activities for the design and construction for all Work in the Contract and shall indicate the date at which the Work begins and is complete. The Baseline Progress Schedule shall also show design activities including, but not limited to, the various stages of design, design checks, design reviews and the submission dates of checked designs. Any Interim Milestone(s) shall be shown in the Baseline Progress Schedule and may be used by the Authority for the assessment of Liquidated Damages.

b) The schedule shall define a complete logical plan that can realistically be accomplished, to execute the Work defined in the Contract.

c) The Schedule shall comply with the work constraints and milestones defined in the Contract as well as all other contractual terms and conditions. The Schedule shall be consistent in all respects with the specific interim Time-Related Contract Provisions, and any order of work requirements of the Contract documents. The Schedule shall meet all interim milestone dates and shall not extend beyond the Project Completion Date. This submission shall reflect the Design-Builder's plan at the time of Contract Award, and prior to the start of any Work. No negative float is allowed in the Baseline Progress Schedule submission.

d) Detailed Schedule Requirements - As a minimum, the Design-Builder shall address the following in the Baseline Progress Schedule:

i) Defining Project details and defaults – Within the Dates tab, the "Planned Start" shall be either the Proposal Due Date or the Contract Award Date and the "Data Date" shall be the Notice to Proceed date. Within the Settings tab, define the Critical Activities as the "Longest Path". The Project Scheduler role does not have security privileges to change this data in the project Details tab, so requests for changes to this data needs to be forwarded to the Authority's Project Manager or designee.

ii) Sufficient activities shall be included to assure that there is adequate planning for the entire Project. The appropriate number of activities will be largely dependent upon the nature, size, and complexity of the Project. In addition to all site construction activities, network activities shall include: activities necessary to depict the procurement/submittal process including shop drawings and sample submittals; the fabrication and delivery of key and long-lead procurement elements; testing of materials, plants, and equipment; settlement or surcharge periods activities; sampling and testing period activities; cure periods; activities related to temporary structures or systems; activities assigned to subcontractors, fabricators, or suppliers; erection and removal of false work and shoring; major traffic stage switches; activities assigned to the Authority and other involved State agencies and authorities, including final inspection; activities to perform punch list work; and activities assigned to other entities such as utilities, municipalities, County government/agencies, and other adjacent contractors. The Schedule shall indicate intended submittal dates, and depict the review and approval periods as defined in the Contract Documents for Authority review.

The following activities shall be incorporated into the Progress Schedule:

Activity ID	Activity Description	Duration	Follows	Logic Tie	Responsible Party
C00035	Notification to Proceed (NTP)	1 Work Day			NYSTA
C00036	Get Start Meetings	1 Work Day	M00025	FS	NYSTA
C00005	Pre-work Conference	1 Work Day	M00025	FS	NYSTA
C00040	Prepare/Submit Safety & Health Plan	Minimum 1 Work Day	C00035	FS	Design Builder
C00045	Approve Safety & Health Plan	10 Work Days	C00040	FS	NYSTA
C00055	Set Up Engineer's Field Office	10 Work Days	C00035	FS	Design Builder
M00050	Design-Builder's First Day of Construction Work	0 - Start Milestone	C00055, C00045	FS	Design Builder
C00060	Prepare & Submit Baseline Progress Schedule	10 Work Days from receipt of NTP	C00035	FS	Design Builder
C00065	Review Baseline Progress Schedule	10 Work Days	C00060, M00025	FS	NYSTA
C00070	Accept Baseline Progress Schedule	1 Work Day (see Note 1)	C00065	FS	NYSTA
C00075	Mobilization	Minimum 1 Work Day	M00050	SS	Design Builder
M00100	Field Work Begins	0 - Start Milestone	M00050, C00055, C00060		Design Builder
M00900	Substantial Completion	0 - Finish Milestone	See definition	FF	Design Builder
C09010	Other Agency Inspection	20 Work Days	M00900	FS	Others
C09020	Authority Inspection	15 Work Days	M00900	FS	NYSTA
C09030	Punch list work	15 Work Days	C09020	FS	Design Builder
C09040	Demobilization	Minimum 1 Work Day	C09020	FS	Design Builder
M00950	Design-Builder's Last Day of Work	0 - Finish Milestone	C09040	FS	Design-Builder
M00999	anticipated Project Completion	0 - Finish Milestone	M00950	FF	Design-Builder

Note 1 – Acceptance Date shall not exceed 40 Work Days from Notice of Award. The Logic Tie

shown shall be used as a relationship to the predecessor activities contained in the column named Follows.

iii) **Work Breakdown Structure (WBS)** - A multi-level hierarchal WBS shall be incorporated. The levels (nodes) shall include, but not be limited to:

Level 1- is the project level; and shall have the project name.

Level 2- Shall have seven nodes, “REPORTING MILESTONES”, “PLANNING”, “DESIGN”, “ROW”, “PROJECT PROCUREMENT”, “CONSTRUCTION”, and “PROJECT MANAGEMENT”

Level 3- shall have three nodes under “CONSTRUCTION”: “PRE-CONSTRUCTION”; “CONSTRUCTION OPERATIONS”; and “POST CONSTRUCTION/CLOSEOUT”. In addition, shall have at least two nodes under Design: Design Unit design and review.

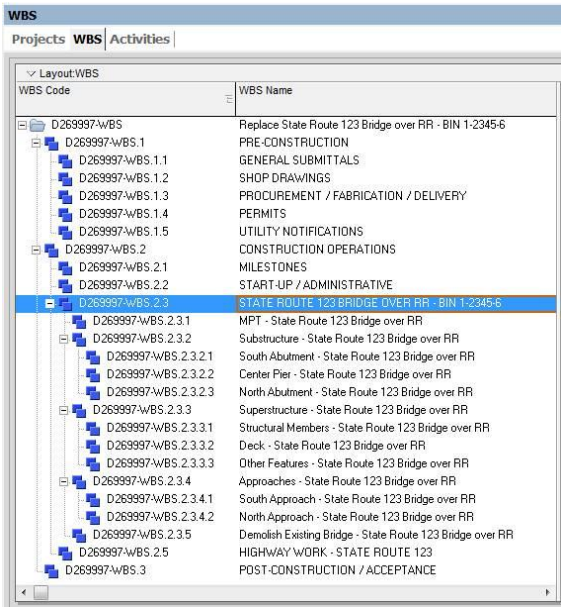
For all projects under “PRE-CONSTRUCTION” a fourth level of the WBS shall consist of at least the following four sub nodes: “GENERAL SUBMITTALS”, “SHOP DRAWINGS”, “PROCUREMENT/FABRICATION/DELIVERY”, and “UTILITY COORDINATION”.

Under the “CONSTRUCTION OPERATIONS” node, the grouping of activities may vary depending on the scope and nature of the project work. The Design-Builder shall coordinate with the Authority Project Manager to determine the best way to represent (group activities) the project deliverables (i.e. Bridge, Roundabout, Highway segment, Interchange, Intersection, etc.). The Authority Project Manager may require sub nodes for AREA (geographic area within the project limits), STAGE, or for a bridge project SUBSTRUCTURE, SUPERSTRUCTURE, and DECK.

Generally Level 4 would be by geographic area within the project limits, Level 5 would be by highway feature (bridge, highway segment, intersection), Level 6 the highway features should be broken into their components; such as, a bridge into components such as Substructure, Superstructure, and Deck, or a highway segment into components such as pavement, drainage, earthwork, lighting, traffic signals, etc.

An example Work Breakdown Structure is shown below in Figure 1

FIGURE 1



iv) **Activity ID** - Include a unique identification number for each activity. Activity ID numbers shall not be changed, or reassigned. Task type Activity IDs shall be prefixed by a “C”. Milestone type activities shall be prefixed by an “M”.

v) **Activity Name** - Clearly and uniquely define each activity name with a description of the work that is readily identifiable to inspection staff and the progress of each activity can be measured. Each Activity shall have a narrative description consisting at a minimum of a verb or work function (i.e. form, pour, excavate, etc.), an object (i.e. slab, footing, wall, etc.), and a location (i.e. STA, bridge or retaining wall number, street, etc.). The work related to each Activity shall be limited to one Area of the Contract, one Stage of the Contract, one WZTC Phase of the Contract, and one Responsible Party of the Contract. The Activity Name shall not be changed for the duration of the contract without approval of the Authority’s Project Manager.

vi) **Milestone Type Activities** - Include activities for all Contract milestones that define significant contractual events such as Contract Award, Notice to Proceed, Design-Builder Start Work, Substantial Completion Date, Project Completion Date, and coordination points with outside entities such as utilities, State agencies, Authorities, municipalities, Time-Related Contract Provisions, etc.

All milestone activities in the Schedule shall be assigned the standard Global calendar named Milestone/Curing 365 Day/8 hour”, this calendar should also be assigned to any activities for concrete curing.

- The Contract Award milestone shall have a primary constraint of “Finish On” and the date of Contract signature by the State Comptroller,
- The Project Completion milestone shall have a primary constraint of “Finish on or before” and the Project Completion Date.
- The Design-Builder Start Work” Start milestone activity that will eventually reflect the actual date the Design-Builder started Work authorized under the contract.

All maintenance type work activities, such as maintaining temporary concrete barrier or rodent control, should be shown on the schedule with Start and Finish milestone type activities not task dependent activities.

vii) **Activity Durations** – Define the Original Duration of each activity in units of whole work days, except for activities of less than one day duration which should be shown in units of tenths of a day. Except submittal/procurement activities, durations shall not exceed 15 work days unless approved by the Authority's Project Manager. Durations for Authority submittal reviews shall meet the requirements set forth in the Contract documents. If requested by the Authority's Project Manager, the Design-Builder shall justify the reasonableness of planned activity time durations. Task Dependent activities shall not have zero durations.

viii) **Production Rates** – For each non-administrative work activity in the schedule the Design-Builder shall enter the quantity of the predominate item of the work activity into the field labeled "PR Quantity", the Unit of Measure for that item in the field labeled "PR Unit", the anticipated production rate of the equipment and labor (crew) resources for that work activity in the field labeled "Production Rate / Day", and the associated duration for that work activity in the field labeled "PR Duration". These are all Activity level UDF fields, and can be found in the activity Layout named Contractor Production Rates. If requested by the Authority's Project Manager, the Design-Builder shall furnish other information needed to justify the reasonableness of activity durations.

ix) **Activity Relationships** - Clearly assign predecessors and successors relationships to each activity, and assign appropriate logic ties between activities (Finish to Start, Start to Start, Finish to Finish, etc.). Do not have any open ended activities, with the exception of the first activity and last activity in the schedule. An activity may only appear once as a predecessor or successor to another specific activity, but may be assigned as a predecessor or successor to many different activities. Do not include inappropriate logic ties with Milestone activities (For a finish milestone activity: a predecessor shall only be assigned a Finish to Finish logic tie, a successor shall only be assigned a Finish to Start or Finish to Finish logic tie. For a start milestone: a predecessor shall only be assigned a Finish to Start or Start to Start logic tie, a successor shall only be assigned with a Start to Start logic tie). Lag time may not exceed 10 days. The Design-Builder shall not use negative Lag times.

x) The Design-Builder shall assign the "Contract Award Date" activity as a predecessor to all Review and Approval type activities to be performed by Authority staff.

xi) **Activity Constraint Dates** – The Design-Builder shall not have any constrained activities, with the exception of contractual dates, unless the Authority's Project Manager accepts such constraints in writing. Milestone activities shall be included for the Contract Award which shall have a primary constraint of "Finish On" and the date of Contract signature by the State Comptroller, and for the anticipated Project Completion Date which shall have a primary constraint of "Finish on or before" and the Project Completion Date indicated in the Contract documents. Only contractual/owner-designated constraints are allowed unless specifically authorized by this Special Provision or the Authority's Project Manager. If used, only Constraints of type, "Finish on or Before", 'Start on or After", or when deemed appropriate by the Engineer "As-Late-As-Possible" are acceptable.

xii) **Activity Dates** – With the exception of contract Milestone dates, "Actual Start" and "Actual Finish" dates and "Planned Start" and "Planned Finish" dates, activity dates

shall be calculated by the project scheduler tool within the Primavera software. No Actual Start or Actual Finish dates shall be entered in the Baseline Progress Schedule, with the exception of activities that were completed prior to the Contract Award.

xiii) **Calendars** - Use clearly defined calendars that account for expected seasonal weather conditions (including winter shutdown periods) and environmental permit requirements, for the planning and scheduling of activities. Do not incorporate an activity with a description of "Winter Shutdown" that requires constraints. Provide the work days per week, holidays, the number of shifts per day, and the number of hours per shift by using the Calendar feature called "Time Periods" in the P6 software. Incorporate any seasonal restrictions to the work within calendars assigned to activities.

- Global calendars used in the Progress Schedule shall be those established by the Authority. There are only two Global Calendars developed and maintained by the Authority for use by Design-Builder's, they are the following:
    - NYSDOT/Authority Milestone/Curing 365 Day / 8 hour
    - State Business Days, 5 Day Work Week w/State Holidays, Field

Changes desired for these calendars shall be forwarded to CPMSchedulingSection@dot.state.ny.us, and if appropriate these changes will be performed by the Office of Construction system admin staff. This will be accomplished by making a copy of the existing Global calendar; the new calendar will then be renamed and modified as necessary.

- Calendars related to specific resources (i.e., a specific person or piece of equipment) shall be established as Resource Calendars, with the Calendar name clearly identifying the resource.
- All other calendars developed by a Design-Builder shall be established as Project Calendars, with the calendar name including the contract D# and describing the function (i.e., D260000 - Asphalt Calendar, D260000 - Concrete Calendar, D260000 - Landscape Calendar, D260000 - Painting Calendar, D260000 – Design-Builder's 5 Day/8 Hour Workweek). All work activities of the Design-Builder shall be assigned to Project Calendars.
- Activities for shop drawing reviews and other approvals by Authority personnel shall be assigned the (referenced date above) standard Global – "State Business Days, 5 Day Work Week w/State Holidays, Field" Calendar that reflects all holidays observed by the State.
- The Baseline Progress Schedule cannot include a calendar that reflects any workers working more than 8 hours in any one calendar day or more than 5 days in any one week. (§102-7 LABOR AND EMPLOYMENT) Following the Contract award the Design-Builder can add additional calendars in their next Monthly Progress Schedule submission based on an approved overtime dispensation.

xiv) Clearly define significant interaction points between the Design-Builder, the Authority, and other entities including but not limited to: Federal, State and local agencies/authorities; and utilities. All activities of the Department, utility companies, adjacent contracts, and other entities that affect progress and influence any contract required dates including durations shall be shown in the Schedule. This includes dates related to all Permits or Agreements. The Schedule shall give special

consideration to sensitive areas such as road closures and parklands and shall indicate any time frames when work is restricted in these sensitive areas as outlined in the permits issued by the regulatory agencies, and provided in the Contract documents.

xv) **Activity Resources** – The Design-Builder will generally not be required to assign labor or material resources in the Resource Dictionary, or assign them to Schedule activities. The Design-Builder will not be required to assign costs to resource assignments in the Schedule. The Design-Builder is required to enter the major equipment resources to the appropriate activities in the Schedule, these shall include pile drivers, large cranes, asphalt paving equipment, and concrete finishing machines.

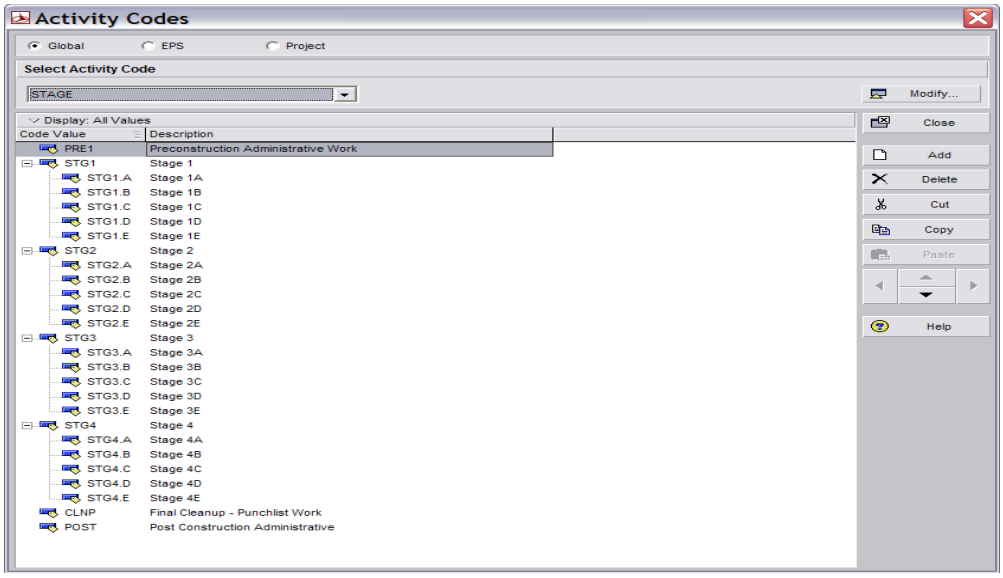
It shall be the Design-Builder's responsibility to assure the activity logic in the Schedule properly reflects their resource limitations. If the Design-Builder anticipates multiple crews for the same Schedule activity, these resources shall be documented in the Schedule narrative. As an activity can have only one responsible party, no activity shall involve multiple crews comprised of the Design-Builder and a subcontractor, or multiple subcontractors.

xvi) **Activity Codes** – The Design-Builder shall include a well-defined activity coding structure that allows activities to be sorted and filtered. Activity Codes shall be developed and assigned as needed by the Project Manager to facilitate the use and analysis of the Schedule.

- No Global Activity Codes shall be incorporated in any Progress Schedule submission to the Authority's Project Manager except those established by the Authority.
- The Design-Builder shall assign the appropriate activity code values to each activity in the Progress Schedule for the following Global Activity Codes that are in the Department's/Authority's enterprise database:
    1) RESPONSIBLE PARTY (DOT GLOBAL)
    2) STAGE (DOT GLOBAL)
    3) AREA (DOT GLOBAL)
    4) TYPE OF WORK (DOT GLOBAL)
    6) CHANGED (ADDED/DELETED) WORK (DOT GLOBAL)
    7) TIME Related Clauses (DOT GLOBAL)
    8) DELAY (DOT GLOBAL)
    9) DBE/MWBE (DOT GLOBAL)
- Additional Activity Codes developed for specific projects shall be established as Project Activity Codes. As a minimum this shall include the following:
    1) SUBCONTRACTOR

xvii) **Activity Code Values** – Each Activity Code shall be broken down into various Activity Code Values that are then assigned to activities. For example, the Activity Code "Stage" shall include a hierarchal arrangement of Activity Code Values as shown below in Figure 2:

FIGURE 2



xviii) **Activity Code Assignments** - For each activity, within the activity details the Design-Builder shall assign Activity Code values to identify the "Responsible Party" (i.e. – Design-Builder, Authority, Utility Co, Municipality) for the work to be performed (one and only one responsible party shall be assigned to each activity), the "Stage" of the contract for the work that will be performed, the "Area" where the work is to be performed, the "WZTC Phase", and the Type of Work (i.e. - Procurement, Paving, Embankment, Excavation, Electrical, Signing, etc.). For activities included in work governed by time-related contract provisions, the appropriate "Time Related" activity code shall be utilized. For activities included in work added and/or changed within an Order-On-Contract, the appropriate "Added/Changed Work" code shall be utilized. For all work activities performed by the Design-Builder or subcontractors/fabricators/suppliers, "Contactor" shall be designated as the Responsible Party. If the Design-Builder wants a separate activity code to enable sorting the activities of subcontractors, fabricators, or suppliers a separate "Subcontractor" code shall be utilized.

xix) **Interim Milestone Completion Dates with Liquidated Damages and Special Time-Related Contract Provisions** (i.e. – Incentive/Disincentive provisions, Lane Rental) – Each time-related contract provision in the Contract shall be represented in the Progress Schedule by having a start and finish milestone, with appropriate predecessors and successors assigned to all Schedule activities considered part of that time-related contract provision work including the start and finish milestone activities. The Start milestone for the time-related Contract work shall have predecessors and/or date constraints assigned that include those defined in the Contract documents, and the Finish milestone for the time-related Contract work shall have successors and/or date constraints assigned that include those defined in the Contract documents. All Schedule activities associated with each specific time-related contract provision shall be assigned to a separate node within the project WBS and the WBS node description shall be labeled accordingly, in addition these activities shall be assigned the appropriate Time-Related Clauses (DOT GLOBAL) activity code value. A Level Of Effort activity shall be used for each time related contract provision (i.e - "Incentive 1 Duration" or "B Clock 1 Duration"), this activity shall have the Start Milestone as a predecessor with a SS relationship and the Finish

Milestone as a successor with a FF relationship and the duration of this activity shall be calculated when the project is scheduled.

xx) **Baseline Narrative** - Include a narrative in Microsoft Word and/or Adobe Acrobat format that includes the following topics and attachments:

- **Contract Identification.** Include the contract D number, project name, project location, and name of the Design-Builder.
- **Key milestone dates.** Include the actual Contract Award Date, original and adjusted Project Completion Date, Substantial Completion Date, and anticipated completion of all Project Work. Also include any contract Interim Milestone dates (I/D, B-Clock, LD, etc), and scheduled Start and Finish dates for those Milestone activities.
- **General approach.** Describe the Design-Builder's general approach to construct the Work outlined in the baseline schedule. Address the reasons for the sequencing of work and describe any resource limitations, potential conflicts, and other salient items that may affect the schedule and how they may be resolved.
- **Key Plan**s. If not provided in the Contract plans, or if modified by the Design-Builder, provide copies of the appropriate Contract plan sheets marked up to correlate values on the Contract plans (for Area of Work, Stage of Work, and WZTC Phase) to the Design-Builder's planned breakdown of the project (ie- Activity Codes, Activity Descriptions) for scheduling purposes.
- **Logic Justifications.** The justification(s) for each activity with a duration exceeding 15 working days. The justification(s) for Design-Builder imposed activity constraints proposed in the schedule. The reason for any lags assigned to any activities.
- **Calendars.** Include a list of calendars which have been incorporated in the Schedule, and for each calendar the general reason for its use in the Schedule.
- **Critical Path issues.** A brief discussion of the critical path shown in Appendix 2, highlighting any potential challenges that are foreseen associated with the critical path work.
- **Coordination issues.** Outline any anticipated coordination issues related to work activities by other entities that require additional information from, or action by, the Authority's Project Manager.
- **APPENDIX 1 – Scheduling/Leveling Report.** This appendix in Adobe Acrobat PDF file format, formatted to fit standard ANSI Size A (Letter) size paper (8.5 inch x 12 inch) (215 mm x 279 mm) paper, printed with portrait orientation, shall be included with the narrative as a separate file.

  A complete Scheduling/Leveling Report (SCHEDLOG.TXT file generated by the NYSDOT's Oracle-Primavera scheduling software application) which includes the Schedule Settings, Statistics, Errors, Warnings, Scheduling/Leveling Results, Exceptions, Activities with unsatisfied constraints, Activities with unsatisfied relationships, and Activities with external dates. The statistics shall include, # of Activities, # of Activities Not Started, # of Activities In Progress, # of Activities Completed, # of Activity Relationships, and # of Activities with Constraints. Total number of activities on the critical path, percent complete, activities without predecessors, activities without successors, and activities out of sequence.

- **APPENDIX 2 – Progress Schedule plot.** This appendix in Adobe Acrobat PDF file format, formatted to fit ANSI Size B (Ledger) paper (11 inch x 17 inch) (279 mm x 431 mm) paper, printed with Landscape orientation, shall be included with the narrative as a separate file.

  Appendix 2 to the narrative shall be an electronic schedule plot (Adobe Acrobat format) using the Global Layout named "Baseline Schedule submission", with activities sorted by Start Date in ascending order, Grouping of activities by WBS, and only the "Longest Path" filter applied. This plot shall provide a clear critical path from the Data Date to the last activity in the schedule. Graphical representations shall be shown at a suitable scale to be legible and readable.

xxi) **List of Submittals –** The Design-Builder shall submit with the Progress Schedule a list of all Submittals (i.e. – design plans, project specification, shop drawings, required permits, erection/demolition plans, Health and Safety Plan, etc.) generated from the Baseline Progress Schedule for review and acceptance by the Authority's Project Manager. The Design-Builder shall use a Filter to limit the schedule activities shown in the report to only the prepare/submit, and review/approve activities related to submittals. The report shall be in Adobe PDF format and transmitted to the Project Manager by email. This list shall be revised and updated monthly with each schedule submission.

e) Schedule Submission

i) Within the timeframe indicated in Table 2 column 1, submit one electronic copy of the Baseline Progress Schedule in a Critical Path Method (CPM) format for the Authority Project Manager's review and acceptance.

TABLE 2 (IN WORK DAYS)

Timeframe from receipt of Notice of Award to Submission of complete Baseline Schedule. (Column 1)	Timeframe for Department Project Manager's Review (Column 2)	Timeframe from Notice of Award to acceptance by the Authority 's Project Manager not to exceed (Column 3)
10	10	40

ii) The Authority's Project Manager will review the schedule and return it, accept it with comments, or reject it within the timeframes indicated in Table 2 column 2, following the date of receipt of the Design-Builder's submission.

iii) If the schedule is returned with comments, the Design-Builder shall address all comments and revise the schedule as necessary. The Design-Builder shall complete the Final Baseline Progress Schedule and obtain the acceptance of the Authority's Project Manager within the timeframe required in Table 2 column 3.

iv) If the schedule is accepted by the Authority's Project Manager without any comments, the Design-Builder shall copy the schedule and rename it for submission as the Final Baseline Progress Schedule.

v) In no way does the Baseline Progress Schedule modify the Contract documents.

vi) The Design-Builder shall assign appropriate Activity Codes and provide custom Layouts, Filters, and/or report formats necessary to allow the Project Manager to generate a report from the each Progress Schedule submission of all submittals

required under the Contract (i.e., shop drawings, required permits, erection/demolition plans, etc.). The list shall show scheduled submission date, review date, and acceptance date for each submittal and identify the earliest activity affected by each of these submittals. This list shall be generated from each Progress Schedule submission until all such activities are completed.

3.3.4.3 **Final Baseline Progress Schedule**

a) If the Baseline Progress Schedule is returned to the Design-Builder with comments, the Design-Builder shall make a copy of the schedule and rename it as the Final Baseline Progress Schedule with comments addressed and revisions made as necessary. The Design-Builder shall complete the Final Baseline Progress Schedule and obtain acceptance of the Authority t's Project Manager within the timeframe required in column 3 of Table 2, or within one week of the Design-Builder's receipt of the final comments by the Authority's Project Manager, whichever is sooner.

b) The Authority's Project Manager will review the schedule and return it, accepted or with comments, within 5 Work days following the date of receipt of the Design-Builder's submission.

c) The Final Baseline Progress Schedule must be "accepted" or "accepted as noted" by the Authority's Project Manager prior to the Authority evaluating any Design-Builder disputes associated with time impacts. This does not preclude the Design-Builder from submitting a dispute while the schedule is being reviewed for acceptance.

3.3.4.4 **Monthly Progress Schedule Submissions.**

a) First Monthly Progress Schedule Submission – Within three Work Days following acceptance of the Final Baseline Progress Schedule or the closing date for the first month's contract payment period whichever is later, the Design-Builder shall perform a Progress Schedule Update to reflect the status of all activities where work was performed in the time period between the start of work and acceptance of the Final Baseline Progress Schedule. This shall include actual dates entered in the Actual Start and Actual Finish columns, and Remaining Duration for activities where work has commenced but has not been completed, in addition the Design-Builder shall incorporate any Progress Schedule Revisions that reflect any changes in how future work activities are to be completed.

b) Subsequent Monthly Progress Schedule Submissions - On a monthly basis, the Design-Builder shall submit a copy of the current Progress Schedule that includes all Progress Schedule Revisions and Progress Schedule Updates to reflect the actual and planned prosecution and progress of the contract work. Progress Schedule Updates shall reflect the status of activities that have commenced or have been completed, including the following items: (a) actual dates in activity Actual Start and Actual Finish columns as appropriate; (b) actual Remaining Duration for activities commenced and not complete; and (c) actual activity Suspend or Resume dates for activities commenced and not complete. Progress Schedule Revisions reflect modifications made to activities in the current project baseline schedule in any of the following items: (a) activity Original Duration; (b) changes in logic connections between activities; (c) changes in Constraints; (d) changes to Activity Descriptions; (e) activity additions or deletions; (f) changes in Activity Code assignments; (g) changes in Calendar assignments, (h) Productivity Rates. All "Out of Sequence" activities noted in the scheduling log shall be corrected to reflect the current construction operations.
When preparing a formal submission of the Progress Schedule, the Design-Builder shall

make a copy of the current Progress Schedule and name it according to the file naming convention provided by the Authority in Table 1.

c) Additional Schedule Requirements - In addition to the schedule requirements detailed for the submission of the Baseline Progress Schedule, the following shall be provided by the Design-Builder:

i) Data Date - the "Data Date" shall be the date the Project Scheduler last edits the schedule prior to submission to the Authority's Project Manager (generally the last day of the month). The Project Scheduler shall enter the Data Date through the Schedule (F9) tool.

ii) Activity Status Tab -

a. Durations – the Original Duration shall not be changed without prior written justification by the Design-Builder, and written approval by the Authority's Project Manager. The Design-Builder shall edit the Remaining Duration to reflect progress made on work activities, and shall not use Duration %. If a proposed change to Original Duration is due to additional or changed work to the contract the Design-Builder shall instead add an activity to reflect this additional work, and assign the appropriate Activity Code. The Design-Builder shall not use zero durations for Task Dependent activities.

b. Started and Finished dates – for each activity where work was begun during the month, the Design-Builder shall check the box adjacent to Started and enter the date the work began. For each activity where work was completed during the month, the Design-Builder shall check the box adjacent to Finished and enter the date the work was completed.

c. Suspended work – The first time that work has been suspended on a schedule activity, the Design-Builder shall enter the Suspend and Resume fields within the Project Details under the Status tab. For any subsequent suspensions of work to that activity the Design-Builder shall break that activity into two or more activities to accurately reflect the suspension and resumption of work dates in the field, and to more accurately reflect the relationship to other work activities.

iii) Calendars – To change a Project calendar for activities scheduled in the future, the Design-Builder shall copy the calendar and use a revised name that includes a reference to which Monthly Update the change was incorporated (i.e. - D260000 - Concrete Calendar should be revised to D260000 – 2 - Concrete Calendar to reflect the 2nd Monthly Update when the change was made to the calendar). The reason for the change in the calendar shall be documented in the Narrative.

iv) Notebook Tab –

a. Delays - For any activities on the critical path that are delayed during this monthly reporting period, the Design-Builder shall enter the dates the activity was delayed and the reason for such delay in the Notebook tab of that activity.

b. Activity Changes – For any changes to activity logic, calendar assignments, suspended work, added or revised lag periods or constraints the Design-Builder shall document the change and reason in a Notebook Topic for that activity by assigning the appropriate "Progress Submission # Revision" and describing the changes.

v) Production Rates – For any activities where the work to be performed is similar in nature to work already performed on the same Project and that the Production Rate for the work to be performed is different than the actual Production Rate for work already performed, the Authority's Project Manager may require the Design-Builder to adjust the Duration for the work to be performed to reflect the more appropriate Production Rate.

vi) Deleted work – If work has been deleted the corresponding work activities in the schedule shall be deleted. The Design-Builder shall not just zero the activity duration since the calendar assigned to the zero duration activity shall still affect the logic of future work activities.

d) Monthly Progress Schedule Narrative - For each Monthly Progress Schedule submission, the Design-Builder shall submit a narrative in Microsoft Word, or Adobe Acrobat format that includes, but is not limited to the topics from the Baseline Narrative and the additional topics below:

i) **Project Progress.** Discuss the progress that was made during the current reporting period, and document any Total Float gained or recovered during the period. For major work items describe the differences between the actual work performed and the work planned for the period as represented in the preceding Progress Schedule submission, including explanations for the deviations.

ii) **Suspended Work.** For all suspended work activities that could otherwise logically be progressed, identify the responsible party prohibiting the progression of the work, as well as the detailed reasons why.

iii) **Project Delays.** Discuss any delays experienced during the current reporting period. Quantify any relative change in Total Float for the project since the last Progress Schedule submission. For each activity on the critical path (include Activity ID's and Activity Descriptions) where work was delayed during the reporting period, provide the following detailed information including:

- the extent in days (negative float) of the delay, and events that caused the delay.
- the party(s) responsible for the delay event(s).
- the other activities in the construction schedule affected by the events.
- the reasonable steps needed to minimize the impact of the delay, and which party needs to take the action(s).

The Design-Builder is reminded of the requirements of Notice & Recordkeeping as found in DB Sections 104-7, 109-9, 109-10 and 109-15 as they relate to Disputed Work. The Design-Builder shall include a copy of any notice provided to the Project Manager for any time-related delay dispute as part of their narrative.

iv) **Project Issues.** List any other problems experienced during this Progress Schedule submission period, the party responsible for the problems, and the Design-Builder's intentions to resolve the issue(s).List all activities for procurement of long lead time materials that are behind schedule and the reason(s) why.

v) **Schedule changes.**

- List of all added or deleted activities included in this Progress Schedule submission, and the reason(s) for and the impact(s) of such changes.

- List all changes in activity Original Durations, the justification for such change(s), and the impact(s) of such changes.
- List all changes in relationships between activities included in this Progress Schedule submission, and the reason(s) for and the impact(s) of such changes.
- List any addition or deletion of activity or project constraints, and the reason(s) for and the impact(s) of such changes.
- List all changes to the project calendars, and the reason(s) for and the impact(s) of such changes.

vi) List all activities for procurement of long lead time materials that are behind schedule and the reason(s) why.

vii) For major work items describe the differences between the actual work performed and the work planned for the period as represented in the preceding Progress Schedule submission, including explanations for the deviations.

viii) Description of any changes to the critical path since the last Monthly Progress Schedule submission and the impacts of such changes.

ix) The major work elements, as defined in the WBS, to be accomplished during the next monthly work period.

x) Any potential problems that are anticipated for the next monthly work period and the proposed solutions to such problems. Identify potential problems or risks that either Authority or Design-Builder may be potentially responsible for. Explain what action the responsible party (i.e. - Authority or Design-Builder) needs to take and the date by which time the action needs to taken to avoid the problem.

xi) Any planned acceleration of activities that the Design-Builder anticipates to undertake within the next monthly work period that either the Authority directed, or that the Design-Builder believes is necessary.

xii) The following appendix in Adobe Acrobat PDF file format, formatted to fit ANSI Size E paper (34 inch x 44 inch) (863 mm x 1117 mm) paper, printed with Landscape orientation, shall be included with the narrative as a separate file.

- APPENDIX 1 – A listing of all work activities as of the Data Date, using the NYSDOT/ Authority Appendix 1 activity layout, sorted by Finish date, Total Float in increasing order, showing the Activity ID, Activity Name, Original Duration, Remaining Duration, Actual Duration, Total Float, Early Start date, Start date, Finish date, Late Finish date, and Calendar ID. The grouping of activities shall be by WBS. The Gantt Chart shall clearly indicate all activities in the schedule. Graphical representations shall be shown at a suitable scale to be legible and readable.

xiii) The following appendix in Adobe Acrobat PDF file format, formatted to fit ANSI Size B (Ledger) paper (11 inch x 17 inch) (279 mm x 431 mm) paper, printed with Landscape orientation, shall be included with the narrative as separate files.

- APPENDIX 2 – A listing of all work activities as of the Data Date, using the NYSDOT/Authority Appendix 1 activity layout, sorted by Finish date, Total Float in increasing order, showing the Activity ID, Activity Name, Original Duration, Total Float, Start date, Finish date. There shall be no Grouping of activities, and the global Filter for Longest Path shall be applied. The Gantt

Chart shall clearly indicate the project critical (longest) path, with logic lines. Graphical representations shall be shown at a suitable scale to be legible and readable.

xiv) The following appendix in Adobe Acrobat PDF file format, formatted to fit standard ANSI A (Letter) size paper (8.5 inch x 12 inch) (215 mm x 279 mm) paper, printed with portrait orientation, shall be included with the narrative as a separate file.

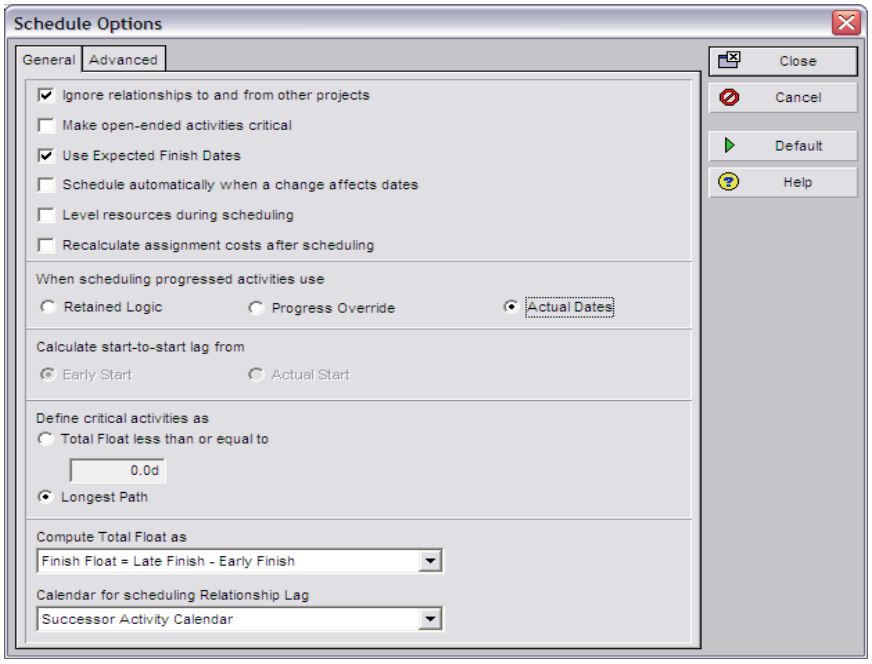
- APPENDIX 3 – A complete Scheduling/Leveling Report file generated by the Department's/ Authority Primavera scheduling software application which includes the Schedule Settings, Statistics, Errors, Warnings, Scheduling/Leveling Results, Exceptions, Activities with unsatisfied constraints, Activities with unsatisfied relationships, and Activities with external dates. The statistics shall include, # of Activities, # of Activities Not Started, # of Activities In Progress, # of Activities Completed, # of Activity Relationships, and # of Activities with Constraints. Total number of activities on the critical path, percent complete, activities without predecessors, activities without successors, and activities out of sequence.

e) For any contract time extension requests the Design-Builder shall include: a Time Impact Analysis (TIA) for any changes to the schedule for future work for such issues as Added Work, VECP, or Changed Conditions; and a Delay Analysis that documents all delays from the Contract Award to the current date that is based on critical path delays that occurred when comparing subsequent Monthly Progress Schedule submissions and the supporting delay documentation in the Monthly Schedule Narratives.

f) Schedule Submission - The Design-Builder shall submit the Monthly Progress Schedule to the Authority's Project Manager at the end of each month. The schedule submission to the Authority's Project Manager shall be made within three (3) Work Days of the Data Date (last day of the month), whether or not the Authority's Project Manager has accepted the previous Monthly Progress Schedule submission. Schedule submittals will only be considered complete when all documents and data have been provided.

Immediately prior to submitting the schedule the Project Scheduler shall "Schedule" the project, when scheduling the project the Scheduling Options shown in Figure 3 shall be used unless approval to vary from these settings is given by the Authority's Project Manager. The Project Scheduler shall use the same Scheduling Options for all Progress Schedule submittals for the duration of the contract, unless directed otherwise by the Authority's Project Manager.

FIGURE 3



g) Schedule Submission Method - The Design-Builder shall submit the schedule to the Authority's Project Manager electronically for review and acceptance. The filename shall conform to the requirements of Table 1. The Project Scheduler can change the Project ID and Name through the WBS at the top node, as they do not have privileges to edit data through the Project Details tab. The Design-Builder's submission shall be documented by an E-mail to the Authority's Project Manager, with a copy to CPMSchedulingSection@dot.state.ny.us and all appropriate project participants, that the project schedule on the network is ready for review. The Design-Builder's E-mail to the Authority's Project Manager shall also consist of the following:

i) The subject of the E-mail shall include the contract D number, the Project Name, the Progress Schedule's ProjectID, and Design-Builder company name. (i.e. – D260000, Rehabilitation of Main Street viaduct, D260000-1UD2, ABC Contractors)

ii) The E-mail message shall include the name of the Authority's Project Manager, the current anticipated Finish date of the last activity in the Project Schedule, a statement as to how that date compares to the current Project Completion Date, and the name of the Authority's Construction Quality Assurance Engineer (CQAE).

iii) Electronic files of all Narrative Reports and required attachments associated with the schedule shall be submitted by the Design-Builder in Adobe Acrobat format.

3.3.4.5 **As-Built Progress Schedule**

The Design-Builder shall submit the As-Built Progress Schedule with Actual Start and Actual Finish dates for all activities, within ten (10) Work Days following final acceptance of work by the Authority.

3.3.4.6 **Look-Ahead Schedule.**

Except during winter shutdown periods the Design-Builder shall prepare a Look-ahead Schedule as either a plotted report from the current progress schedule, or as a narrative report, and provide it to the Authority's Project Manager on a weekly basis, or if accepted by the Authority's Project Manager on a mutually agreed upon interval. The Look-ahead schedule shall include the actual work progressed during the past week and work activities planned for the next two week period, and shall include, but is not limited to: anticipated lane closures, road closures and detours, environmental issues, and utility issues. The Authority's Project Manager will provide the Design-Builder with guidelines for determining the begin dates and end dates for the three week reporting periods, along with the how the plotted schedule report or narrative report shall be formatted.

The Authority may use the Look-ahead schedules to facilitate communication with other Federal or State agencies, local municipalities, utility companies, railroads, emergency service providers, public news media and other affected parties.

3.3.5 Progress Schedule Review and Analysis

3.3.5.1 **Immediate Rejection of Progress Schedule Submissions.**

The following deficiencies in a Design-Builder's Progress Schedule submission shall be grounds for the immediate rejection by the Authority's Project Manager, without further review, analysis and/or comments.

a) Failure of the Project Scheduler to "schedule" the Project, as of the Data Date.

b) Failure to attach a copy of the complete Scheduling/Leveling Report (SCHEDLOG.TXT file generated by Primavera software application).

c) Any activities without predecessors, or activities without successors, appearing in the Scheduling/Leveling Report with the exception of the first and last activity in the schedule.

d) Any activity constraints appearing in the Scheduling/Leveling Report that have not been approved in writing by the EIC, or that are not specifically allowed by this Special Provision.

e) Any Activities with Actual Dates > Data Date appearing in the Scheduling/Leveling Report.

f) Any Milestone Activities with invalid relationships appearing in the Scheduling/Leveling Report.

g) Failure to have a clearly defined Critical Path from the Data Date to the last activity in the schedule, using the Longest Path method. This would reflect logic errors in the project schedule.

h) Failure to attach the schedule Narrative and required appendices.

i) Failure to correct any "Out-Of-Sequence" activities that affect the critical path.

If any of these deficiencies are found, the Design-Builder's submission shall be considered deficient, and the Authority's Project Manager will notify the Design-Builder immediately by return E-mail of the rejection of the schedule submittal.

3.3.5.2 **Schedule Analysis Method.**

Events, actions, and progress that cause delays or gains to the Progress Schedule will be analyzed solely by the "Contemporaneous Period Analysis" method.

3.3.5.3 **Project Progress Meetings**

One topic of the regular weekly progress meetings held by the Project Manager and attended by the Design-Builder shall be a review of the Weekly Status Report generated from the Progress Schedule. The Design-Builder shall be represented by their design, construction and Project Scheduler personnel. The Project Scheduler shall bring a copy of the printed plot of the current Weekly Status Report to the progress meeting, the report shall show the current anticipated schedule for all remaining work with the critical path activities highlighted.

a) The review of the Status Report serves as the forum to discuss project progress and delays, suggested remedies, necessary Progress Schedule revisions, coordination requirements, change orders, potential Design-Builder time extension requests, and other relevant issues. If contract work is falling behind the Progress Schedule, the responsible party (i.e. - Design-Builder or Authority) shall be ready to discuss what measures it will take in the next thirty (30) days to put the work back on schedule so as to meet the Project Completion Date specified in the Contract.

b) Items of discussion will include, but are not limited to: project progress; schedule progress; near term and long-term schedule issues, including RFIs, Shop Drawing submittals, permit work, utility relocations, mitigation work; project issues and risks; proposed solutions; and any relevant technical issues that are schedule related.

c) At the meeting the Project Scheduler shall compile an action item list that describes who is responsible for existing or pending issues and the date by which the issue needs to be resolved to avoid delays. The Design-Builder shall forward a copy of the action item list to the Project Manager within 2 business days following the meeting.

3.3.5.4 **Authority Review and Acceptance of Progress Schedules**

The Authority's Project Manager will review the Monthly Progress Schedule submissions and will prepare a written response (Progress Schedule Review Report) to the Design-Builder's submission within five (5) Work Days following receipt of the Design-Builder's complete schedule submission. The Authority's Project Manager will either "accept" the schedule, "accept as noted", or "reject" the schedule for re-submittal by the Design-Builder.

If the Progress Schedule submission is not in compliance with contract requirements, the Authority's Project Manager may reject the submittal and shall forward any comments and requests for schedule revisions to the Design-Builder. The Design-Builder shall address all comments in writing and/or make the requested revisions, and resubmit the revised schedule within three (3) Work days of the Authority Project Manager's reply. If the Authority's Project Manager determines the revised submission still does not meet the contract requirements, any further revisions required thereafter shall also be submitted for acceptance within (3) Work days of the request for revisions by the Authority's Project Manager.

For schedules that are "accepted as noted" the Authority's Project Manager shall forward any comments, or requests for revisions, to the Design-Builder. The Design-Builder shall address all comments in writing and/or make the requested revisions as part of the next scheduled Progress Schedule submission.

The Design-Builder shall make adjustments to the Progress Schedule in accordance with the comments from the Authority's Project Manager and resubmit copies for review consistent with the requirements of this section.

The Authority's Project Manager, by accepting the Progress Schedule, does not agree that the Progress Schedule is reasonable or that by following the Progress Schedule the Design-Builder can complete the Work in a timely manner. If, after a Progress Schedule has been accepted by the Authority's Project Manager, either the Design-Builder or the Authority's Project Manager discover that any aspect of the Schedule is in error, or something significant has been omitted, the Design-Builder shall correct the Progress Schedule in the next Progress Schedule submission and describe this revision in the Narrative report.

Acceptance of Progress Schedules by the Authority's Project Manager shall not be construed to imply approval of any particular construction methods or sequence of construction or to relieve the Design-Builder from its responsibility to provide sufficient materials, equipment and labor to guarantee the completion of the Contract in accordance with the Contract requirement.

Acceptance of the Progress Schedule by the Project Manager does not attest to the validity of assumptions, activities, relationships, sequences, resource allocations, or any other aspect of the progress schedule. Within the contractual constraints, the Design-Builder is solely responsible for the planning and execution of the work.

Acceptance of the Progress Schedule by the Authority's Project Manager shall not be construed to modify or amend the Contract Agreement or the date of Project Completion therein. Completion dates can only be modified or amended by standard contractual means, through an official HC-250b Request for Extension of Completion Date.

If any resources are included in the Progress Schedule, it is not intended that the Authority's Project Manager, by accepting the schedule should use the Design-Builder's resource data for anything other than determining the reasonableness of achieving the Design-Builder's production rates. Resources included with the accepted CPM schedule shall not be misconstrued as a cost benchmark for the performance of planned or actual work.

Once the Progress Schedule has been accepted, the Design-Builder shall not deviate from it without first notifying the Authority's Project Manager in writing.

Upon receipt from the Design-Builder of the corrected schedule, a new review period by the Authority's Project Manager of five (5) Work days will begin.

3.3.6 Changes to Progress Schedule due to Added/Deleted/Changed Work:

3.3.6.1 Changes to the Contract

In the event a notice of a change to the Contract is received, the appropriate changes to the progress schedule shall be made, as necessary, to incorporate the anticipated added/deleted/changed work and the Design-Builder shall notify the Authority's Project Manager in writing within 10 (ten) calendar days if there is any effect of such change to the schedule. The reasons for these revisions must be succinct, comprehensive, and factual to merit consideration. Change to the contract includes, but is not limited to, Extra Work, Agreed Prices, Change Orders, and Suspensions of Work Directed by the Authority's Project Manager, Changed Condition, and Value Engineering Change Proposals. Added, deleted and/or extra work associated with Change Orders shall be reflected in the next Monthly Progress Schedule

Submission in anticipation of and prior to the date in which the work physically takes place without regard to the dates when the actual Change Order was approved. The effect of the change to the Contract on the projects Critical Path shall be stated. Extra work or additional work that does not affect the controlling operation on the critical path will not be considered as the basis for a time extension. All schedule activities effected by added, deleted or changed work that is included in a signed Change Order, Field Change Order, or Authorization of Extra Work (with the exception of minor quantity changes that do not impact contract milestones), or work activities performed by the Design-Builder at risk in anticipation of such Authority approval, shall be assigned the appropriate Activity Code (Added/Changed Work) and Code Value (sequentially numbered) to denote which "Changed Contract Work" order number correlates to those activities of work.

3.3.6.2 **Time Impact Analysis**

For each request of an adjustment of Contract time due to an anticipated change to future work in the Progress Schedule, when the Design-Builder or Authority's Project Manager consider that an anticipated or approved change to the Contract may impact the critical path and Contract progress by more than a calendar month, the Design-Builder shall submit a Time Impact Analysis (TIA). The TIA shall be submitted as part of any Order on Contract (Change Order) and/or VECP if the critical path changes by more than a calendar month.

The TIA shall be based on a revised Progress Schedule and shall be submitted as an electronic file (using Microsoft Word for the narrative) containing:

a) The TIA shall illustrate the impacts of each change or delay on the current scheduled completion date or internal milestone, as appropriate.

b) The analysis shall use the accepted Monthly Progress Schedule that has a data date closest to and prior to the event as the "Current Baseline", this shall then be compared against the "What-if Project Plan Baseline" for the purpose of the TIA.

c) If the Authority's Project Manager determines that the accepted schedule used does not appropriately represent the conditions prior to the event, the accepted schedule shall be updated to the day before the event being analyzed.

d) The TIA shall include an impacted schedule ("What-if Project Plan Baseline") developed from incorporating the actual or anticipated event into the accepted schedule by adding or deleting activities, or by changing durations or logic of existing activities.

e) If the impact schedule shows that incorporating the event negatively modifies the critical path and scheduled completion date of the accepted schedule, and the Project Manager accepts the impacted schedule, the difference between scheduled completion dates of the two schedules shall be equal to the proposed adjustment of contract time.

f) The Authority's Project Manager may construct and utilize an appropriate project schedule or use another recognized method to determine adjustments in contract time until the Design-Builder provides the TIA.

g) The Design-Builder shall submit a TIA within fifteen (15) Work Days of receiving a written request for a TIA from the Authority's Project Manager.

h) The Design-Builder shall allow the Project Manager ten (10) Work Days after receipt to accept or reject the submitted TIA. All accepted TIA schedule changes shall be

included in the next Monthly Progress Schedule submission.

i) If a TIA submitted by the Design-Builder is rejected by the Authority's Project Manager, the Design-Builder shall meet with the Project Manager to discuss and resolve issues related to the TIA. If agreement is not reached, the Design-Builder will give notice in conformance with §104-7, Notices and Recordkeeping, and submit in accordance within the provisions in §109-10.6, Required Content of Dispute Submission.

j) The Design-Builder shall only show actual as-built work, not unapproved changes related to the TIA, in subsequent Monthly Progress Schedule submissions. If agreement is reached at a later date, approved TIA schedule changes shall be included in the next Monthly Progress Schedule submission.

k) Request for a contract time extension will not be processed until the receipt and approval of a Time Impact Analysis.

3.3.7 Failure to Submit Progress Schedules and/or Recovery Schedules

If the Design-Builder fails to comply with the provisions of this Special Provision, the Authority's Project Manager may suspend payment for any Contract Work.

1) If the Design-Builder's Progress Schedule submission is rejected due to any deficiency noted in paragraph 5.3.5.1(a) through (i), it shall be considered an incomplete submission and therefore substantially deficient.

2) If the Design-Builder's revised Progress Schedule submission does not address the written comments provided by the Authority's Project Manager, and does not include a written explanation with a reasonable rational for not addressing those comments, the submission shall be considered deficient.

3.3.8 Recovery Schedule

1) If the latest completion time for any work on the current Progress Schedule results in an activity being delayed ten percent or more of the time beyond the required Contract duration or any specified Milestone duration, as adjusted if appropriate, the Project Manager may require the Design-Builder to submit a Recovery Schedule and written description of the plan to recover all lost time and maintain the required Completion Date or specified Interim Milestone Date(s).

2) With the Recovery Schedule the Design-Builder shall include revised calendars, activity Production Rates, and/or revised activity logic along with a narrative that identifies how time will be recovered.

   The submission may be supplemented with a request for a Contract Time Extension. The Design-Builder shall provide a reasonable plan for accomplishing the work of the contract within the current completion date, or to the requested contract extension date. The Authority's Project Manager will use the Recovery Schedule to evaluate time extensions, with or without charges.

3.3.9 Float

During the course of contract execution, Total Float generated due to the efficiencies of either party (State or Design-Builder) will be considered project Float that is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party.

Any party assigned activity responsibility within the schedule has the full use of the project Float until it is depleted.

3.3.10 Progress Schedule Updates and Weekly Status Reports:

1) The Design-Builder shall perform a Progress Schedule Update on a minimum of a weekly basis, and every fourth schedule update period shall be consistent with monthly contract payment period.

2) The Design-Builder shall generate a Weekly Status Report after performing the Progress Schedule Update and Scheduling the project with a Data Date of the day the schedule was updated, and submit it to the Project Manager within one (1) Work Day of the Data Date for that update period. The Weekly Status Report shall be generated using the activity Layout named Weekly Status Report, with activities grouped by the WBS, and using the standard default filter named Longest Path. The Gantt Chart shall clearly indicate the project critical (longest) path. Graphical representations shall be shown at a suitable scale to be legible and readable.

3) During any time periods within the contract that special time-related contract provisions are in effect, including Incentive/Disincentive Periods, the Project Manager may require more frequent Progress Schedule Updates and/or Progress Schedule Status Reports.

3.4 PROGRESS CHECK POINTS AND PAYMENT

Specified schedule submittals and schedule updates shall be considered Progress Check Points.

vii) The cost of preparing and updating the CPM schedule and meeting all other requirements of this Special Provision shall be included the Project costs.

SP-4. MATERIALS APPROVAL PROCEDURES FOR DESIGN-BUILD PROJECTS

All Materials used in the Design-Build work shall meet the quality requirements described in the Contract Documents. The use of Standard Specifications and Approved List (AL) materials are expected for commonly available products for incorporation into the Work. Additionally, existing Special Specifications that include material requirements may also be used in the Work.

If the Design-Builder deviates from Contract Documents, Standard Specifications, or existing Special Specifications (accepted by the Authority for use on this project), the Design-Builder shall develop Design Plans, Project Specifications and Work Plans that define materials and procedures to complete the Work. The Design-Builder shall progress acceptance of materials and sources, proving durability through tests and evaluations as appropriate, prior to use in the Work. The Design-Builder shall document the sources of supply (NOTE: Must be in compliance with all “Buy America” regulations) and kinds of materials that will be used in the work as soon as they are known.

As part of the Design requirements of DB Section 111, the Authority will review and accept materials proposed for use as follows:

Products that are not presently on the AL but claim to meet specification requirements shall be evaluated by the Authority prior to use. The Authority will perform the necessary testing according to the existing material requirements for the products as defined in Section 700 of the NYSDOT Standard Specifications or any Special Specification (accepted by the Authority for

use on this project requirements. A request for inclusion on the AL shall be made by the manufacturer / supplier. The required submittal information for AL consideration can be found at:

https://www.dot.ny.gov/divisions/engineering/technical-services/materials-bureau/approved-list-submission

When products are proposed for which NYSDOT/Authority does not have Standard or Special Specifications, or where proven materials may be used in non-traditional applications, materials evaluations will be progressed based on review of technical details, performance histories, and/or physical testing. The Design-Builder will provide this information to prove the expected performance and durability of these unique materials before they can be used in the Work. Submissions shall include:

General Information

- Product Name
- General Description
- Purpose/Justification
- Manufacturer
- Supplier

Technical Details (Specifications)

- Materials (Include composition and MSDS sheets)
- Construction Details
- Testing, Inspection and Acceptance (identify standards like AASHTO, AREMA or ASTM)
- Maintenance requirements and frequencies that may apply for the intended application

Performance History

- Test Results (including test methods for durability, strength, appearance, etc.)
- Previous Uses (describing who, where, when, documented performance)

The evaluation of materials will depend on the uniqueness of the proposed materials, critical nature of the application, and detailed information provided. Evaluations will consist of the following:

- Materials deemed less critical will likely be accepted based on literature review only. Use of these materials can begin at any time.
- Materials deemed more critical will require both literature review and physical testing by the Authority. Physical testing will commence only after literature review determines the material has a likely chance of meeting all performance criteria defined in the Design-Builder's Special Specifications. Conditional acceptance will be made upon completion of the literature review that will allow use of these materials prior to completion of

physical testing. However, failure of materials during physical testing will result in a NCR for any materials incorporated into the Work. Rectification of the generated NCR shall be at the sole judgement of the Authority.

The Design-Builder shall consider the uniqueness of the proposed materials, critical nature of the application, and detail of information provided for an evaluation. Additionally, The Design-Builder shall consider the duration of the evaluation required to reasonably progress all sampling, transportation, preparation, testing, and evaluation of results as defined in the material requirements for an item and may NOT use any part of the evaluation process as a basis for claim and/or delay. The Authority will, when possible, perform AASHTO, AREMA and/or ASTM tests of the materials for acceptance purposes. When the Authority does not have the capabilities to evaluate materials, testing labs may be hired for testing as needed at the Design-Builder's expense.

Use of any materials prior to acceptance by the Authority shall be at the Design-Builder's risk. After acceptance, materials shall conform to specification requirements and subject to all QC/QA actions and Authority verification.

Once in Construction, the Design-Builder is responsible for QC of all materials while the Authority is responsible to verify the quality of all materials through the timely submission of Certified Test Reports. The Authority will progress sampling and testing for verification of materials according to the established accepted Quality Control Plan developed for the project.

SP-5. SPECIAL PROVISIONS FOR TESTING BRIDGE BEARINGS

Throughout this Special Provision, references to the Standard Specification shall mean the edition of the NYSDOT Standard Specifications, Construction and Materials, English Units, Office of Engineering, in effect on the Proposal Due Date.

5.1 DISC-DESIGN STRUCTURAL BRIDGE BEARINGS

The Design-Builder shall perform the inspection, sampling and testing of disc-design structural bridge bearings, on a lot by lot basis, in accordance with the procedures outlined in Materials Procedure 84-2 (Quality Assurance Inspection for 716.06.01, Disc-Design Structural Bridge Bearings 716.07.01 Pot-Design Structural Bridge Bearings) [to be referred to as MP84-2]. The requirements for these bearings are listed in the Standard Specifications.

5.1.1 Polyether Urethane Structural Element

The physical properties of the polyether urethane shall conform to the requirements ASTM D2240, ASTM D412 and ASTM D395 as listed in Section 700 of the Standard Specifications.

5.1.2 Steel Plates

Conform to the requirements of the steel designated on the Contract Plans and applicable provisions of the NYS Steel Construction Manual (refer to Section 700 of the Standard Specifications).

5.1.3 Stainless Steel

Stainless steel shall conform to the requirements of ASTM A167 or ASTM A240, Type 304. Refer to Section 700 of the Standard Specifications.

5.1.4 Polytetrafluoroethylene (PTFE) Sheet and Strip

Finished PTFE sheet and strip shall conform to the physical requirements of ASTM D638M and ASTM D792 as listed in Section 700 of the Standard Specifications.

5.1.5 Welding Procedure

All welding shall conform to, and all welders shall be qualified in accordance with the requirements of the NYS Steel Construction Manual.

5.1.6 Compression Strain

Requirements and test conditions are outlined in Section 700 of the Standard Specifications.

5.1.7 Sliding Coefficient of Friction

For all guided and non-guided expansion type disc-design bearings, the bearing manufacturer will test one production bearing per lot (see Section 700 of the Standard Specifications).

5.1.8 Rotation Test

The bearing manufacturer will test one production bearing per lot. Evaluation criteria are listed in Section 700 of the Standard Specifications.

5.2 POT-DESIGN STRUCTURAL BRIDGE BEARINGS

The Design-Builder shall perform the inspection, sampling and testing of pot-design structural bridge bearings, on a lot by lot basis, in accordance with the procedures outlined in Materials Procedure 84-2 (Quality Assurance Inspection Procedure for 716.06.01 Disc-Design Structural Bridge Bearings 716.07.01 Pot-Design Structural Bridge Bearings) [to be referred to as MP84-2]. The requirements for these bearings are listed in the Standard Specifications.

5.2.1 Elastomeric Rotational Element

The tensile properties of the neoprene and natural rubber elements shall conform to ASTM D412, ASTM D573 and ASTM D2240. These neoprene and natural rubber elements shall also conform to ASTM and AASHTO requirements as listed in Section 700 of the Standard Specifications [ASTM D2000, Line Call Out M2BC517A14B34, ASTM D2000, Line Call Out M4AA517A13B33, AASHTO Standard Specifications for Bridge Section 2.25.2, Materials 50 Durometer Hardness].

5.2.2 Steel

All steel will conform to the requirements of the steel designated on the Contract Plans and applicable provisions of the NYS Steel Construction Manual (refer to section 700 of the Standard Specifications).

5.2.3 Stainless Steel

Stainless steel shall conform to the requirements of ASTM A167 or ASTM A240, Type 304. Refer to Section 700 of the Standard Specifications.

5.2.4 Polytetrafluoroethylene (PTFE) Sheet and Strip

Finished PTFE sheet and strip shall conform to the physical requirements of ASTM D638M and D792 as listed in Section 700 of the Standard Specifications).

5.2.5 Welding Procedure

All welding shall conform to, and all welders shall be qualified in accordance with the requirements of the NYS Construction Manual.

5.2.6 Sliding Coefficient of Friction

For all guided and non-guided expansion type pot-design bearings, the bearing manufacturer will test one production bearing per lot (see Section 700 of the Standard Specifications).

5.2.7 Rotation Test

The bearing manufacturer will test one production bearing per lot. Evaluation criteria are listed in the Standard Specifications.

5.3 STEEL LAMINATED ELASTOMERIC BRIDGE BEARINGS AND ELASTOMERIC BRIDGE BEARINGS WITH EXTERNAL LOAD PLATES

The Design-Builder shall perform the inspection, sampling and testing of elastomeric bridge bearings, on a lot by lot basis, in accordance with the procedures outlined in Materials Method No.: NY 23 M (to be referred to as MM23). The requirements for these bearings are listed in the Standard Specifications.

5.3.1 Elastomeric Material

The physical properties of the cured elastomeric compound shall meet the requirements of ASTM D412 (see Section 700 of the Standard Specifications).

Manufacturer must certify that the elastomeric compound passes Grade 3 Low-Temperature Brittleness as determined by ASTM D746 – Brittleness Temperature of Plastics and Elastomers by Impact, Procedure B.

5.3.2 Internal Steel Plates (shims)

Conform to the requirements of ASTM A36M, ASTM 1008/A 1008/M or ASTM 1011/A 1011/M (Grade 33, 36 and 40).

5.3.3 External Load Bearing Plates and Steel Backing Plates

External load plates shall conform to the requirements of ASTM A36M and to the requirements of the Steel Construction Manual (SCM).

5.3.4 Welding Procedure

The bearing manufacturer shall submit a Welding Procedure to the Project Manager for each welding process to be used in the manufacture of the bearings. No welding shall be performed until the manufacturer receives an acceptance of the Welding Procedure.

5.3.5 Bearing Tolerances

The finished elastomeric bearings shall conform to the design dimensions, with the tolerances listed in Section 700 of the Standard Specifications.

5.3.6 Compression / Deflection

Test conditions are outlined in the Standard Specifications.

5.3.7 Adhesion

Visual inspection as outlined in the Standard Specifications.

SP-6. PAYMENT REDUCTIONS, LIQUIDATED DAMAGES AND EARLY COMPLETION BONUS

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 maintained during the construction of the Project. Therefore, payment reductions and/or liquidated damages will be assessed against the Design-Builder under the circumstances specified below. Conversely, an early completion bonus will be paid to the Design-Builder for completing the Project before the Project Completion Date in accordance with the circumstances specified below.

6.1 PAYMENT REDUCTIONS AND LIQUIDATED DAMAGES

6.1.1 Project Completion

The Design-Builder shall pay liquidated damages, as described in DB § 108-5 – Liquidated Damages, for failure to achieve Project Completion by the Project Completion Date. The Project Completion Date will be established based on the proposed duration provided in Table SCD-1 on Form SCD and described in Part 1 – DB Agreement, Article 2.3 – Project Completion Date.

6.1.2 Defined Completion

The Defined Completion Date(s) will be the date determined by adding the number of calendar days proposed by the Design-Builder on Form SCD, SCD-2 (the Duration), to the date of the Notice to Proceed as issued by the Authority. The Defined Completion Date(s) may not be changed without written approval by the Authority's Project Manager.

The Design-Builder shall be subject to liquidated damages for failure to meet the Defined Completion Date(s) in accordance with Form SCD, SCD-2 for each calendar day in excess of the total number of calendar days provided on Form SCD, SCD-2.

6.1.3 Defined Completion

The Defined Completion Date will be the date determined by the Design-Builder in submission of their proposal for specific infrastructure elements defined on Form SCD, Table SCD – 2, as the number of calendar days.

6.2 EARLY COMPLETION BONUS

An Early Completion Bonus will be paid to the Design-Builder in the amount of $20,000 per day (45 days maximum) for the number of days Project Completion is achieved earlier than the Project Completion Date. The Project Completion Date will be established based on the proposed duration provided by the successful Proposer in Table SCD-1 on Form SCD and described in Part 1- DB Agreement, Article 2.3 – Project Completion Date.

An Early Completion Bonus will be paid to the Design-Builder in the amount of $125,000 per day (60 days maximum) for the number of days that AETC Completion Date is achieved earlier than the AETC Completion Date. The AETC Completion Date will be established based on the proposed duration provided by the successful proposal in Table SCD-2 on for SCD and described in Part 1 – DB Agreement Article 2.4-Defined Completion Date(s).

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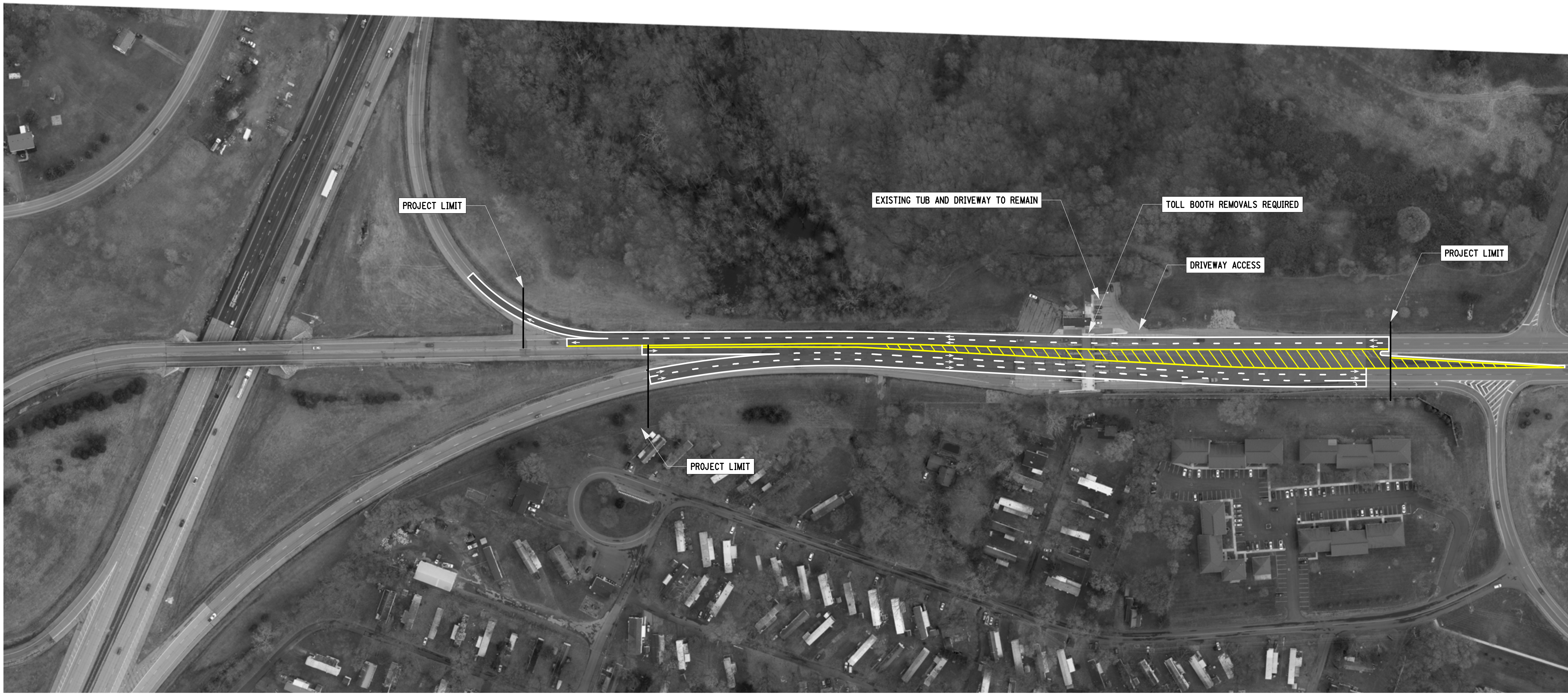
Plotted By: $caduser$
Design File: $dgnfile$
Plotted: $date$ $time$

DESIGN SUPERVISOR: B. DOHERTY
DESIGNED BY: B. LAGRAVE
DRAFTED BY: P. FITZGERALD
CHECKED BY: K. CZORA
CHECKED BY: K. CZORA

NEW YORK STATE OF OPPORTUNITY. Thruway Authority

wsp

TITLE OF PROJECT	CASHLESS TOLLING ON THE NYS THRUWAY
LOCATION OF PROJECT	EXITS 16 TO 61
TITLE OF DRAWING	INTERCHANGE 23 CONCEPT
CONTRACT NUMBER:	
DATE:	3/22/2019
DRAWING NUMBER:	



GRID NORTH

100 0 100 200 300 400
SCALE IN FEET
1" = 200'

DESIGNED BY: B. LAGRAVE
CHECKED BY: K. CZORA
DRAFTED BY: P. FITZGERALD
CHECKED BY: K. CZORA
DESIGN SUPERVISOR: B. DOHERTY

ALTERED ON:	AFFIXED ON: XX/XX/XXXX
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

DATE	DESCRIPTION	BY	SYM.

NEW YORK STATE OF OPPORTUNITY. Thruway Authority

WSP

TITLE OF PROJECT: TOLL BARRIER RECONSTRUCTION NEW ENGLAND THRUWAY

LOCATION OF PROJECT: VARIOUS TOLL BARRIERS

TITLE OF DRAWING: INT 44 - CANANDAIGUA, VICTOR

CONTRACT NUMBER: TANE XX-X

DATE: 03/22/2019

DRAWING NUMBER: XXX-X

ITEM 683.9805XX--25 – TOLL FACILITY SECURITY SYSTEM

1. DESCRIPTION:

1.01 Work under this item consists of furnishing, installing, and testing of security equipment as shown on the drawings and as specified herein. Equipment is to be installed in toll facilities and at remote monitoring locations as indicated.

1.02 This equipment shall be fully compatible with the NYSTA presently installed Access Control, Security Monitoring Subsystem and Alarm Monitoring Subsystem and with the equipment to be furnished and shall be installed in an access control cabinet at the site.

1.03 The Contractor shall either be Lenel certified, or shall have a subcontract with a Lenel certified installer or Access Control Integrator (ACI) to make connections to and install Lenel equipment.

1.04 Furnish, install, integrate, and test Access Control Devices at the locations shown on the Contract Documents and as specified herein. Connect all devices with manufacturer recommended cables.

1.05 The models of Access Control Devices submitted shall be thoroughly tested and proven in actual use in service conditions consistent with the locations shown on the Contract Drawings.

2. MATERIALS:

2.01 Associated components, which have their own item numbers (e.g., wire and cables) shall be installed under their respective items.

2.02 **PTZ CAMERAS**

The contractor shall procure, configure, install and test Bosch AutoDome 7000 HD 20x PTZ cameras, or the latest replacement model offered by the vendor, each with a corner mount as shown on the Contract Drawings. No substitutions will be accepted. The cameras shall be placed as shown on the Contract Drawings, with the final placement determined and verified in the field. Appropriate mounting and junction / back box materials shall be included, as shown on the Contract Drawings.

Cat 5E cable with appropriate connectors, from each camera shall be installed to the Security equipment location within the building interior and protected with surge suppressor as described in Section 2.04 before its connection to the network rack. Cost of cable to be paid under separate item.

2.03 **FIXED CAMERAS**

The contractor shall procure, configure, install and test Bosch FlexiDome 7000 HD fixed cameras, or the latest replacement model offered by the vendor. No substitutions will be accepted. The cameras shall be placed as shown on the Contract Drawings, with the final placement determined and verified in the field. Appropriate mounting and junction / back box materials shall be included, as shown on the Contract Drawings.

Cat 5E cable with appropriate connectors, from each camera shall be installed to the Security equipment location within the building interior and the exterior cameras shall be protected with surge suppressor as described in Section 2.04 before its connection to the network rack. Cost of cable to be paid under separate item.

2.04 **SURGE SUPPRESSOR**

The Contractor shall furnish and install a Ditek, Cat 5E POE, model DTK110RJC6APOE (or approved equivalent) surge suppressor on each outdoor camera cable that is connected to the equipment rack.

2. MATERIALS: (cont'd)

2.05 **CARD READER WITH PIN PAD**

A. Equipment manufactured for non-Lenel access control applications shall not be acceptable.

B. The card readers shall be compatible with the software and access control cards in current use by NYSTA.

C. The card reader shall be designed to securely read, interpret, and authenticate access control data from 13.56 MHz contactless smart card credentials and 125 kHz proximity cards.

D. The card reader shall be optimally designed for use in access control applications to provision of:
   1. Customized security protection through support of the device-independent Secure Identity Object™ (SIO) portable credential methodology to provide enhanced security and performance features.
   2. Unique read selection that enables reading of the Secure Identity Object™ (SIO), standard iCLASS, 125 kHz proximity, and other technologies at the same time.
   3. Utilizes the Trusted Identity Platform™ (TIP) architecture.
   4. A migration platform to upgrade from the most popular 125 kHz proximity technologies to SIO on iCLASS SE by reading both 125 kHz proximity technology and 13.56 MHz contactless smart card technology.
   5. Guaranteed compatibility to read all HID data formats and ensuring card-to-reader interoperability in multi-location installations and multi-card and reader populations when used with Genuine HID products.
   6. Backwards compatibility with legacy 13.56 MHz contactless smart card and 125 kHz proximity access control formats (E.g. 26-bit, 32, 35-bit, 37-bit, 56-bit, and HID Corporate 1000 formats). Compatibility across the product line shall be assured without the need of special programming.
   7. The door card readers shall be HID multiclass SE Readers model 921PTNNEK0000. No substitutions will be accepted.

E. The Contractor shall connect the card reader to interface modules in the access control equipment cabinet with Lenel recommended 10-conductor minimum #24-gauge stranded and continuously shielded cable that is within the cable length limitation defined by the manufacturer.

2.06 **MAGNETIC CONTACTS**

A. Install at the doors as described in this Section, and as shown on the Contract Drawings, in accordance with manufacturer's instructions.
   1. For hollow metal and storefront doors use biased, recessed type contacts wherever possible.
   2. Use surface mounted, biased contacts on doors that are constructed in a way that prevents the use of recessed contacts.
   3. For rolling grilles, sliding doors, gates and shutters use surface mounted biased contact with stainless steel jacketed lead. Contact must be rated for 3-inch gap.
   4. For access doors use surface mounted contact with stainless steel jacketed lead. Contact must be rated for 3-inch gap.
   5. Doors shall have an audible alarm triggered for forced door and door ajar states.

2. MATERIALS: (cont'd)

2.07 **CYLINDERS**

A. Cylinders shall meet the requirements of UL437 including those for pick and drill resistance. Pick resistance shall incorporate two or more independent locking mechanisms including a pin tumbler device with seven top pin chambers with driver pins and a coded sidebar locking mechanism operated independently from the pin tumbler device. Drill resistance shall incorporate cylinder housing with fixed in-place case- hardened inserts to protect the pin tumbler shear line, cylinder plugs with case-hardened inserts to protect the pin tumbler shear line and the side bar, stainless steel driver pins and stainless-steel side pins. All cylinders shall be factory master keyed.

1. Specified Manufacturer: BEST High Security.

2.08 **KEYING**

A. All locks and cylinders shall be construction master-keyed. All locks and cylinders to be master-keyed or grandmaster-keyed as directed by the owner. The factory shall key all locks and cylinders. Furnish the following key amounts:

1. Two (2) change keys per lock
2. Three (3) grand master keys
3. Six (6) master keys per master level
4. Fifteen (15) construction/temporary keys

B. Master keys and all high-security or restricted keyway blanks shall be sealed in tamper- proof packaged boxes when shipped from the factory. The boxes shall be shrink wrapped and imprinted to ensure the integrity of the packaging.

2.09 **MORTISE LOCKSETS**

A. Locksets shall meet the requirements of ANSI/BHMA A156.13-1994, Operational Grade 1, and Security Grade 1 certified, SFIC Security Grade 2. All functions shall be manufactured in a single sized case formed from 12-gauge steel minimum. The lockset shall have a field- adjustable, beveled armored front, with a 0.125" minimum thickness and shall be reversible without opening the lock body. The lockset shall 2 3/4" backset with a one- piece 3/4" anti-friction stainless steel latchbolt. The deadbolt shall be a full 1" throw made of stainless steel and have 2 hardened roller inserts. All strikes shall be non-handed with a curved lip. All locks shall be provided with strike boxes. To insure proper alignment, all trim shall be thru-bolted and fully interchangeable between rose and escutcheon designs.

1. Approved Manufacturers: BEST High Security, Schlage L Series.

2.10 **ELECTRIFIED LOCKSETS**

A. Mechanical features of locksets shall conform to standards as specified above. Locksets shall be designed for both intermittent and continuous duty. All mortise locksets shall be available with switch (Request to Exit feature) to monitor inside or outside lever handle or signal remote location. All locks shall be provided with strike boxes.

1. Approved Manufacturers: Lenel ILS Locks, Von Duprin EL Series, SDC Electrified Mortise

2.11 **INTEGRATION**

A. All of the newly installed security elements shall be integrated into the existing systems at the Authority.

2. MATERIALS: (cont'd)

2.12 **SECURITY COMPONENTS**

A. All materials shall be new, unless otherwise indicated on the Contract Drawings or in these Special Specifications.

B. Unless otherwise noted, at a minimum, the security components to be furnished, installed, tested and commissioned include the following major components:

- Door security devices for secured doors, each with electronic lock, motion detector, access card reader and pin pad.
- Lenel site controllers
- Bosch Fixed cameras
- Bosch PTZ cameras

Number of units as per Contract Drawings or as stated in the Proposal.

C. Any incidental parts which are necessary to complete the installation but are not specified herein or on the design plans, shall be suitable for the outdoor service conditions, compatible with the camera model furnished, and shall be provided as necessary to complete a properly operating system. This includes but is not limited to mounting brackets and hardware, power supplies, low voltage power cabling, grounding and bonding jumper cables, data communications interface hardware, connectors and terminations, cable management devices, and labels.

3. CONSTRUCTION DETAILS:

3.01 Install the Access Control Devices as referenced in this Specification, in accordance with the manufacturer's instructions and as shown on the Contract Documents.

3.02 Connect the Access Control Devices with cables that are recommended by the manufacturer to the locking devices Specified herein along with appropriate modules installed by the Access Control Integrator.

3.03 All incidental services which are necessary to complete the installation but are not specified herein or on the design plans, shall be provided as necessary to complete a properly operating security system.

3.04 Tests for the security system shall be submitted by the Contractor for approval by the Engineer. Testing shall not begin until tests are approved for all Contractor installed Devices.

3.05 Each Security Device that does not pass testing shall be replaced at no additional cost to the Authority. Replacement devices shall be tested according to the tests for the original devices.

4. METHOD OF MEASUREMENT:

4.01 The Scope of Work of this Contract is depicted on the accompanying Contract Drawings and in the Specifications.

4.02 Lump Sum Items: No separate measurement will be made for work of this Section which is to be included in Lump Sum Payment Items.

ITEM 683.9805XX--25 – TOLL FACILITY SECURITY SYSTEM

5. BASIS OF PAYMENT:

5.01 The Work of this Contract includes the following lump sum payment items:
Toll Facility Security System.

5.02 This Item includes payment for all conduits, cables, materials, equipment, testing and services specified herein unless separate pay items have been established for specific materials or portions of work. In this case, costs related to materials or work (such as fiber optic drop cable, patch panel or related testing) shall not be included in the Lump Sum price, but will be paid under their separate Pay Items.

Payment will be made under:

Item No.	Item	Pay Unit
683.9805XX--25	Toll Facility Security System	Lump Sum

Note: XX denotes serialized pay item per Toll Facility site