CASHLESS TOLLING

DESIGN-BUILD PROJECT

TA 19-1, Contract No. D800002

Request for Proposals

Addendum #5

April 11, 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 Form SP of the Instructions to Proposers, Appendix E, Forms, and substitute the attached revised Form SP.

Delete Pages 18 and 23 of the DB Contract Documents, Part 1, DB Agreement, and substitute the attached revised Pages 18 and 23.

Delete Pages 47, 70, 75, 76, 82 through 85, 93, 94, 95, 96, 105, 114, 115, 132, 136, 138, 141, 157, 158, and 159 of the DB Contract Documents, Part 3, Project Requirements and substitute the attached revised Pages 47, 70, 75, 76, 82 through 85, 93, 94, 95, 96, 105, 114, 115, 132, 136, 138, 141, 157, 158, and 159.

Delete Drawing Interchange 39 Concept of the DB Contract Documents, Part 6 – RFP Plans – Indicative/Concept Plans and replace with the attached revised Drawing Interchange 39 Concept.

Note to Design Build Proposers, the following changes have been made to Final RFP Part 7 – Engineering Data since Amendment #4 was posted on April 8 2019:

Part 7, Section 2 – Revised ORT Concept Plans for Exits 19, 21, and 27 – 4/11/19

Part 7, Section 4 – Revised drawing 1 “ORT Ramp Gantry Schematic” and add new drawing “ORT Treadle Pavement” - 4/11/19

Part 7, Section 25- Created new directory “Treadle Frame Plan and Details” – 4/11/19
In addition, please note the following changes:

Editable Forms – 4-11-19 directory inserts 11x17 Form G Gantt Chart (Excel file) and Form SP Schedule of Prices (Word file) and Form SP Schedule of Prices (Excel file) were replaced.

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

FORM SP
SCHEDULE OF PRICES

Proposer: _____

Item #	Item Name	**Price** (1)
806.06000115	Design Build – Construction Work Woodbury	
806.06000215	Design Build – Construction Work Special Exit 16	
806.06000315	Design Build – Construction Work Special Exit 17	
806.06000415	Design Build – Construction Work Exit 18	
806.06000515	Design Build – Construction Work Exit 19	
806.06000615	Design Build – Construction Work Exit 20E	
806.06000715	Design Build – Construction Work Exit 20W	
806.06000815	Design Build – Construction Work Exit 21	
806.06000915	Design Build – Construction Work Exit 21B	
806.06001015	Design Build – Construction Work Exit B1	
806.06001115	Design Build – Construction Work Exit B2	
806.06001215	Design Build – Construction Work Canaan	
806.06001315	Design Build – Construction Work Exit 22	
806.06001415	Design Build – Construction Work Gantry	
806.06001515	Design Build – Construction Work Interchange 23	
806.06001615	Design Build – Construction Work Gantry	
806.06001715	Design Build – Construction Work Interchange 24	
806.06001815	Design Build – Construction Work Gantry	
806.06001915	Design Build – Construction Work Interchange 25	
806.06002015	Design Build – Construction Work Gantry	
806.06002115	Design Build – Construction Work Interchange 25A	
806.06002215	Design Build – Construction Work Gantry	
806.06002315	Design Build – Construction Work Exit 26	
806.06002415	Design Build – Construction Work Exit 27	
806.06002515	Design Build – Construction Work Exit 28	
806.06002615	Design Build – Construction Work Exit 29	
806.06002715	Design Build – Construction Work Exit 29A	
806.06002815	Design Build – Construction Work Exit 30	

806.06002915	Design Build – Construction Work Exit 31	
806.06003015	Design Build – Construction Work Exit 32	
806.06003115	Design Build – Construction Work Exit 33	
806.06003215	Design Build – Construction Work Exit 34	
806.06003315	Design Build – Construction Work Gantry	
806.06003415	Design Build – Construction Work Interchange 34A	
806.06003515	Design Build – Construction Work Gantry	
806.06003615	Design Build – Construction Work Special Exit 35	
806.06003715	Design Build – Construction Work Gantry	
806.06003815	Design Build – Construction Work Interchange 36	
806.06003915	Design Build – Construction Work Gantry	
806.06004015	Design Build – Construction Work Exit 37	
806.06004115	Design Build – Construction Work Exit 38	
806.06004215	Design Build – Construction Work Gantry	
806.06004315	Design Build – Construction Work Exit 39	
806.06004415	Design Build – Construction Work Gantry	
806.06004515	Design Build – Construction Work Exit 40	
806.06004615	Design Build – Construction Work Exit 41	
806.06004715	Design Build – Construction Work Exit 42	
806.06004815	Design Build – Construction Work Exit 43	
806.06004915	Design Build – Construction Work Gantry	
806.06005015	Design Build – Construction Work Interchange 44	
806.06005115	Design Build – Construction Work Gantry	
806.06005215	Design Build – Construction Work Interchange 45	
806.06005315	Design Build – Construction Work Gantry	
806.06005415	Design Build – Construction Work Interchange 46	
806.06005515	Design Build – Construction Work Gantry	
806.06005615	Design Build – Construction Work Interchange 47	
806.06005715	Design Build – Construction Work Gantry	
806.06005815	Design Build – Construction Work Exit 48	
806.06005915	Design Build – Construction Work Exit 48A	
806.06006015	Design Build – Construction Work Exit 49	
806.06006115	Design Build – Construction Work Williamsville	
806.06006215	Design Build – Construction Work Lackawanna	
806.06006315	Design Build – Construction Work Exit 56	

806.06006415	Design Build – Construction Work Exit 57	
806.06006515	Design Build – Construction Work Exit 57A	
806.06006615	Design Build – Construction Work Exit 58	
806.06006715	Design Build – Construction Work Exit 59	
806.06006815	Design Build – Construction Work Exit 60	
806.06006915	Design Build – Construction Work Ripley	
806.06007015	Design Build – Construction Work VMS All Locations	
800.04000025	Design Build – Force Account Work	$8,000,000.00
	Subtotal A	
800.05000015	Design Build – Site Mobilization (Maximum 4% of Subtotal A)	
	Subtotal B (Sum of Subtotal A and Site Mobilization)	
800.01000015	Design Build – Design Services	
800.02000015	Design Build – Construction Inspection Services	
800.03000015	Design Build – Quality Control Services (Materials and Testing)	
	TOTAL PROPOSAL PRICE	

Notes:

1.) Proposers shall complete Form SP using the excel spreadsheet located on the Authority's Project web site.

2.) Subtotal B will be the value used to *calculate* the ~~51~~30% Prime/MWBE/SDVOB self-work requirement less any Self Performance Specialty Items included in Part 5 – Special Provisions.

Instructions:

1.) Enter Lump Sum Price for each Price Item in the white, non-shaded, cells.

Workers Compensation and Disability Benefits	As required by Law

Notes:

(1.) Additional coverage may be required at the Authority's discretion.

ARTICLE 15 LIQUIDATED DAMAGES

TIME IS AN ESSENTIAL ELEMENT OF THE CONTRACT, AND IT IS IMPORTANT THAT THE WORK BE PURSUED VIGOROUSLY TO COMPLETION. THE PUBLIC IS SUBJECT TO DETRIMENT AND INCONVENIENCE WHEN FULL USE OF INFRASTRUCTURE CANNOT BE MADE BECAUSE OF DELAY IN COMPLETION OF THE PROJECT OR PORTION THEREOF, OR WHEN CLOSURES OCCUR. THE AUTHORITY IS SUBJECT TO LOSS OF TOLL REVENUES AND/OR ADDITIONAL ADMINISTRATIVE COSTS FOR MAINTENANCE, ENGINEERING, QUALITY ASSURANCE OVERSIGHT AND POSSIBLY INSPECTION WHEN (A) COMPLETION OF THE PROJECT OR PORTION THEREOF IS DELAYED, (B) CLOSURES OCCUR OR (C) THE WORK OTHERWISE INTERFERES WITH THE AUTHORITY'S ABILITY TO COLLECT CASH OR ELECTRONIC TOLLS.

Should the Design-Builder fail to complete the Work within the time frame set forth in Article 2 of the Agreement, or as described in a subsequent Order(s) on Contract, the Authority may assess liquidated damages for each calendar day, or any portion thereof, that any work remains uncompleted by the AETC Completion Date and/or Project Completion Date.

Subject to the limitations specified in this Article 15, liquidated damages for delay in completion of the Work and achievement of interim milestones shall be assessed at the following rates:

1) $125,000 per day for failure to achieve AETC Completion by the AETC Completion Date.
2) $20,000 per day for failure to achieve Project Completion by ~~August 4~~December 15, 2021.

Design-Builder acknowledges and agrees that the liquidated damages are intended to constitute compensation solely for Design-Builder's failure to meet the deadline and obligations described in Article 2 of this Agreement, and shall not excuse Design-Builder from liability for any other breach of Contract requirements, including any failure of the Work to conform to applicable requirements. Due account shall be taken of any adjustment of the Contract Time for completion of the Work as provided for elsewhere in the Contract Documents. It is understood and agreed by Design-Builder that liquidated damages payable in accordance with this Article 15 are in the nature of liquidated damages and not a penalty and that such sums are reasonable under the circumstances existing as of the date of execution and delivery of this Contract. Additional terms and conditions with respect to liquidated damages payable by Design-Builder are set forth in *Part 2, §108-5 - Liquidated Damages.*

The fact that the Authority has agreed to accept liquidated damages as compensation for its damages associated with any delay in meeting the Contract Deadlines shall not preclude Authority from exercising its other rights and remedies respecting the delay other than the right to collect damages due to the delay.

If the Design-Builder shall abandon performance of the Work before achieving AETC Completion and/or Project Completion, the Contractor agrees to pay to the Authority for loss of beneficial use of the Work of the Contract an amount specified in the Contract, not as a penalty, but as liquidated damages, for each and every calendar day after both the date of abandonment and the date specified for AETC Completion and/or Project Completion that the Work has not achieved AETC Completion and/or Project Completion. The obligation of the Design-Builder to pay liquidated damages as provided in this paragraph shall survive the termination of the Contract.

If the Authority does not terminate the Contract, the damages shall consist of liquidated damages, if any, until the AETC Completion Date and/or Project Completion Date.

audit rights under the Contract shall include the right to audit and access pertinent records of the Design-Builder or the subject entity relating to compliance issues described herein.

The Authority agrees to take all reasonable measures to maintain the confidentiality (to the extent permitted by law) of any information provided by Design-Builder and/or the subject entity pursuant to this Article 17.9 which the Design-Builder has reasonably designated as confidential, and the provisions of Appendix A, Section 9, of the Agreement shall apply with respect to disclosure of any such Records under the Statute (as defined in such section). Any intra-agency written materials prepared by the Authority, or any written inter-agency materials that are in the possession or control of the Authority, to the extent based on information or records designated as confidential or exempt from disclosure under the Statute as provided in the preceding sentence, shall also be designated and treated as such by the Authority to the fullest extent permitted by law. The Authority may disclose any of the aforementioned information, records and materials to the Department, provided that the Department agrees to treat such information, records and material in the same manner as required of the Authority under this paragraph.

The rights and remedies granted to the Authority under this Article 17.9 are in addition to, and not to the exclusion of, any and all of its rights and remedies under the Contract or at law or in equity.

ARTICLE 18 NOTICES REGARDING CLAIMS, LITIGATION AND RULINGS

The Design-Builder shall promptly provide written notice to the Authority's Project Manager and Authority's General Counsel (at the addresses identified in Article 13.1) of all claims, litigation and Governmental Persons rulings pertaining to the Work where such claims, litigation or rulings could subject the Authority to liability or substantially impair the completion of the Project. With such notice, the Design-Builder shall include a brief summary of the issue involved and the Design-Builder's position on such issue. Such written notice is additional to and not in place of any other notices required by the Contract Documents. The Design-Builder shall cooperate and provide, and shall require the Subcontractors to cooperate and provide, such information or records as may be reasonably requested by the Authority concerning such claims, litigation or rulings.

ARTICLE 19 SELF PERFORMANCE

The Design-Builder shall perform with its own organization Contract Work amounting to not less than 51 percent of the original total Contract Price. The Design-Builder's own organization shall be construed to include only Workers employed and paid directly by the Design-Builder and Equipment owned or rented by it, with or without operators. The Design-Builder's own organization does not include employees or Equipment of a Subcontractor, assignee, or agent of the Design-Builder and/or its Principal Participants, and any firm(s) performing Design, Construction Inspection and Quality Control Services. The Contract amount upon which the ~~51~~30 percent requirement is computed includes the cost of Materials and manufactured products which are to be purchased or produced by the Design-Builder under the Contract provisions.

ARTICLE 20 COOPERATION AND FURTHER ASSURANCES

Design-Builder shall cooperate and provide, and shall cause the Subcontractors to cooperate and provide, such information as is necessary or requested by the Authority to assist or facilitate the

The new supplemental generator shall be for the sole purpose of emergency power to the ORT Communication Building. The existing TUB generator shall not provide emergency power to the ORT Communications Building.

8.3.1.3 Power Supply and Distribution Staging

The electricity supply to the existing Tolls and TUBs, including emergency power, shall remain fully operational throughout construction of the new power supply systems for the Cashless Tolling facilities. The Design-Builder's responsibilities for permanent and temporary electrical components shall be in accordance with the maintenance jurisdiction period detailed in DB §105-12. When the electricity supply to the existing Toll Booths to be demolished is discontinued, and with prior approval of the Authority, the Design-Builder shall remove from the Project site any extraneous electrical supply components that are not needed for operation of the Cashless Tolling components.

8.3.1.4 Additional Requirements

The following requirements shall be met:

A) All exposed raceways or conduits shall be made of PVC coated rigid galvanized steel (RGS);

B) All outdoor electrical enclosures and attached parts (for example, breather drains) shall be rated NEMA 4X or a higher degree of protection; and

C) All electrical enclosures shall have a key lock.

8.3.2 Utility Relocation Agreements

It is anticipated that the required Final Utility Work Agreements will be executed between the Authority, the Design-Builder and the owners of impacted utilities once the Design-Builder has determined the final locations of the impacted utilities and the locations of power sources to be utilized. See Part 4.

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

8.3.3 Other Utility Conflicts

Please see Part 4 – Utility Requirements for additional utilities in the project vicinity that may require relocation and modification, if any.

The Lighting Systems installed by the Design-Builder within the Project limits shall be fully maintained by the Design-Builder for the duration of the Project.

13.3.1.1 Power Supply Requirements

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

A) Meet all requirements of NFPA 70 – National Electrical Code (NEC);

B) All outdoor electrical enclosures shall be type 316 stainless steel, rated NEMA 4X or a higher degree of protection; and

C) Meet all requirements of applicable IEEE and ANSI power engineering standards.

13.3.1.2 Removal of Existing Equipment

The Design-Builder shall be responsible for ensuring that:

A) All wiring, conduits, switches, electrical junction boxes, panels, cabinets, enclosures, and other electrical equipment in working condition shall be turned over to the Authority for storage and re-use at other locations.

13.3.2 Permanent Lighting System

13.3.2.1 Lighting Locations

Exit 39 – A new Park and Ride~~Tandem~~ Lot is to be constructed at the Exit ~~and the old Tandem Lot put out of service~~. The lighting at the new Park and Ride~~Tandem~~ Lot must illuminate the entire new Park and Ride~~Tandem~~ Lot and meet, as a minimum, the lighting requirements under 13.3.1. Design-Builder is responsible for the design and construction, electrical connection to the nearby power source. See information relative to GPS located utilities provided by the Thruway under Part 7 - Engineering Data, Section 9.

~~The old Tandem Lot lighting shall be removed when the new lot is placed in service. Placement into service has to be granted by the Authority's Project Manager.~~

Exit 27, 29 (North Lot), 45, 46, 57, Ripley (Westbound): Some illuminators exist at this Tandem Lot already. The Design-Builder shall design and construct additional lighting to illuminate the dark areas of the Tandem Lot. The Lot lighting not consistently or comparably illuminated are not accepted. The Design-Builder is responsible for providing the comparable lighting so the illumination is consistent across the Tandem Lots. Existing Power is already at these Tandem Lots providing power to the initial lighting. The Design-Builder shall be aware of Part 7 - Engineering Data, Section 13 for other potential electrical sources.

Exits/Locations Ripley Eastbound, Exits 19, 22 and 24

Ripley Eastbound has no lighting in the Tandem Lot. Check Part 7 – Engineering Data, Section 9 for the GPS of Utility locations at the Ripley Terminus location. There is a need for lighting at this location and the entire lot needs illumination. Power does exist in Ripley Westbound Lot.

damages shall be applied under Section 619 of the Standard Specifications. This is considered a major violation act.

For the short term closures defined above, NYSTA State Police shall be required at the closure site. The Authority is responsible for obtaining such services and there is no cost to the Design-Builder. The Design-Builder shall provide the Authority (via the Authority's project manager) one week advance notice of need for Police presence due to a short term closure so proper coordination can occur.

15.3.2 Work Zone Traffic Control at Toll Plazas Prior to AET Going Live

The Authority provide(s) under Part 7 – Engineering Data, Section 16 the Design-Builder with the number of lanes that must remain open at each Exit for each hour of the day. The number of lanes that must remain open is a Project Requirement and shall not be violated. The work at the Exits where the Toll Plaza work is occurring prior to AET going live shall be completed within these requirements.

At the ORT Exit sites, the Design-Builder can take a single lane out of service in a two lane directional scenario provided the hourly volume of traffic is 1200vph or less.
The Design-Builder can direct traffic to the shoulder area (if available) in a single lane directional scenario provided the hourly volume of traffic is 1200vph or less. Alternating one way traffic with flaggers is allowed provided the combined opposing traffic hourly volumes are 600vph or less. Alternating one way traffic does not constitute a closure of traffic or traffic stoppage and does require state police presence.

Any violation of these established restrictions shall result in Liquidated Damages as applied under Section 619 of the Standard Specifications. Regardless of the Liquidated Damages amount, this is considered a major violation act.

15.3.3 Work Zone Traffic Control at Toll Plazas to be Demolished

The Design-Builder shall follow the requirements as stated below. The demolition of the Toll Booths shall require staging as stated under the Mainline Gantry Requirements Section 23 and ORT Exit Sites, section 25. The Authority has determined that once the Cashless Tolling is activated and the booths are all EZPass at speeds of 20 MPH that 1,100 cars per hour per booth per direction can be processed. The Design-Builder shall determine the number of booths in each direction that shall be required to be used for each stage of toll booth removal based on the 1,100 vehicles per lane booth/per hour based on the traffic data provided in Section 19 of the Engineering Data Part 7, for all locations requiring Toll Booth removals. Failure to provide the necessary required number of toll booths for staging purposes will result in safety issues/congestion/public outcry and Liquidated Damages resulting in the number of booths deficient to handle the traffic X multiplied by 1,100 vehicles multiplied by Y hours of direction in effect multiplied by $2.50/vehicle. Where X is the number of Booths deficient and Y is the number of hours the deficiency existed. This is considered a major violations act.

15.3.4 Work Zone Traffic Control Plans

The Design-Builder shall prepare and submit WZTC Plans, for each Project Toll Collection location current and proposed, for managing traffic operations and controlling access until Project Completion. The Plans shall identify stages and phases of construction and provide appropriate operating procedures. The plans shall be signed and stamped by a New York-registered professional engineer and submitted to the Authority's Project Manager prior to initiation of any work in proximity to traffic or the implementation of any change in traffic patterns.

The Authority will retain responsibility for toll operations throughout the Project's duration.

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

The WZTC Plan shall include:

A) Contingency plans for reasonable unforeseen interruptions;

B) Duration of each WZTC stage, including duration of lane closure(s), if any;

C) Provisions for maintaining pedestrian traffic through the Project area at all times at all locations where pedestrian access through the Project area currently exists.

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

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

15.3.4.1 Work Zone Traffic Control After AETC "Go Live"

Once all Mainline and ORT gantry sites are fully operational and the system is "Live", the DB shall not shift traffic at each gantry such that vehicles are traveling between lanes or between lanes/shoulders when passing under the gantry centerline (treadle). Traffic shifts, for purposes of staging work, shall be done prior to or after the gantries, such that vehicles are traveling within a complete lane or shoulder when passing under the gantry centerline (treadle). All work zone traffic control shall be in compliance with the requirements contained in this RFP.

15.3.5 Construction Staging Plans and Requirements

The Design-Builder shall be responsible for preparing and implementing Construction Staging Plans, which shall identify the general sequencing for construction for each stage of construction at the Project Sites.

The Construction Staging Plans shall include details of:

A) Duration of construction and sequencing of construction required for each construction stage;

B) Identification of lane(s) to be closed and duration of closure(s), if any;

C) Location and scheduled dates of use for all traffic control and safety devices, including but not limited to traffic channelization devices, barriers, impact attenuators, signs, pavement markings and variable message signs; and

D) Location and schedule of flaggers (where such use is permitted).

The Construction Staging Plans shall indicate the location and treatment of all traffic streams (motorized vehicles, bicycles, pedestrians), the location and type of regulatory, guidance and warning devices, the anticipated impact on local businesses, the means of delivery and deployment of construction equipment, trailers, supplies, materials and other items for the Project, the safety and movement of bicycles and pedestrians, time of construction and public information considerations.

The Construction Staging Plans shall be coordinated with affected police jurisdictions to facilitate safe and effective enforcement. The Plans shall recognize the need for local approval of the use of public roads and indicate how such approval shall be obtained by the Design-Builder.

The use of flaggers is not permitted on the Thruway mainline or Highways.

The Design-Builder shall produce a clear graphical representation of the staging with each stage, with associated traffic clearly delineated, in linear chronological order. Each significant change in traffic patterns shall be presented separately.

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(s) at the project limits ~~of work~~ varies from the standards applicable for new or resurfaced sections, the roadway features (lane & shoulder widths, superelevation and/or 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 Existing Concrete to Remain

16.3.2.1 Existing Concrete Pavement to Remain at ORT Exit Locations

Where full depth reconstruction is not required, all existing concrete pavement to remain as permanent with travel lanes at ORT Exit locations shall be repaired, crack sealed, tack coated and overlaid with a minimum 2" Binder course and minimum 1" Top course.

16.3.2.2 Existing Concrete Pavement to Remain at Interchanges and Terminus Locations

Where full depth reconstruction is not required, all existing concrete pavement to remain as permanent travel lanes at interchange and terminus locations shall be repaired, crack sealed, tack coated and overlaid with a minimum 2 ½ " Binder course and 1 ½ " Top course.

~~16.3.2~~16.3.3 Gantry Approach Pavement

Non-metallic reinforced concrete pavement installed at the Gantry treadle detector slabs shall be placed at locations in accordance with Part 7, Engineering Data, Sections 4 and 25~~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.

~~16.3.3~~16.3.4 Milled and Resurfaced Roadways

The Design-Builder shall mill and resurface pavement areas as necessary to provide for a smooth transition between the existing and fully reconstructed or profile modified pavement surfaces. Transitions into existing surfaces shall be in accordance with the applicable Standard Sheets. The Design-Builder shall mill a minimum of 50' beyond the limits of any full depth reconstructed or profile modified pavement sections. Minimum mill and inlay depth at tie-transitions shall be 2".

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

~~16.3.4~~16.3.5 Utility Trench Restoration

Outside areas of full depth reconstruction, pavements in trench restoration areas shall minimally match the adjacent pavement section.

~~16.3.5~~16.3.6 Local Roadways and Streets

~~16.3.5.1~~16.3.6.1 Reconstructed/Resurfaced Local Roadways

Reconstructed permanent local roads and streets pavements systems shall be constructed in accordance with the NYSDOT CPDM. The same pavement treatment shall be applied across the entire width of the roadway and shoulders and shall be placed on properly prepared subgrade. Asphalt and concrete pavement materials and construction methods shall meet the requirements of NYSDOT Standard Specification Sections 402 and 502 respectively.

In the absence of local Standards, the reconstructed local roadways (other than on bridges) shall consist of a pavement structure, applied across the entire width of the roadway and shoulders, and placed on a properly prepared subgrade, that meets or exceeds the following characteristics:

A) Pavement structure: Thicker of existing or Table 4-1 of NYSDOT CPDM conventional pavement thickness guide;
B) Suitable and properly prepared subgrade, per the CPDM;
C) Where positive drainage outlets can be provided, suitable edge drain or under drain systems shall be installed in accordance to requirements of the NYSDOT CPDM Chapter 9.

Disturbed and damaged curbs, sidewalks, and driveways shall be replaced with corresponding elements having equal to or better characteristics.

The Design-Builder shall provide all tie-in work to avoid differential problems, accounting for such factors as total surfacing thickness, minimum structural requirements, and unbound base/subbase thickness.

~~16.3.5.2~~16.3.6.2 Resurfaced Local Roadways

In the absence of local Standards, resurfaced local roadways shall minimally consist of a pavement course, comprising 1.5 inches of top course HMA, and shall be placed on a properly-

prepared surface, across the entire width of all lanes and shoulders. Locations retaining curb or other controlling edge of pavement features shall be milled to the depth of the resurfacing section.

Existing profiles and cross slopes of local roadways shall be maintained, unless a transition to match the new construction profiles and cross slopes is necessary.

The finish quality of the pavement shall meet the requirements of NYSDOT standards as supplemented by Authority requirements prior to opening the facility to traffic.

~~16.3.6~~16.3.7 Maintenance, Trucking, and Commuter Access Roadways and Parking Lots

New or Reconstructed maintenance, trucking, and commuter access roadways and parking lots shall be constructed of HMA or Concrete pavement. Installed pavement and supporting subbase shall meet or exceed the maximum thickness requirements as defined for minor commercial driveways in NYSDOT Standard Sheet 608-03.

The finish quality of the pavement shall meet the requirements of NYSDOT standards as supplemented by the Authority requirements prior to opening the facility to traffic.

~~16.3.7~~16.3.8 Temporary Pavement

The Design-Builder shall design, construct, and maintain all temporary pavements within the Project Limits in compliance with the following requirements:

A) Engineered to provide adequate pavement support for existing traffic loading for duration of temporary condition. As required under 619 of the Standard Specifications, the pavement surface in such a condition as to permit the safe, comfortable passage of vehicle at posted speed limit;

B) Provide a pavement system that meets the same friction aggregate specifications as the permanent pavement,

C) Provide a durable, maintainable pavement system that meets the requirements of NYSDOT and NYSTA Section 619 Specifications;

D) Include pavement-to-structure transition areas as a part of ride quality;

E) Minimize pavement-to-structure transition deviations;

F) Minimize pavement type-to-pavement type transition deviations;

G) Provide adequate cross slope to drain water from pavement surface, consistent with maximum grade breaks between lanes and between lanes and shoulders;

~~16.3.8~~16.3.9 Structures Approach Pavement

Approach pavement shall be designed and placed in accordance with Project Requirement 10 - Structures and placed over a subgrade course equaling or exceeding the properties outlined in Section 16.3.1 herein.

~~16.3.9~~16.3.10 Repaired or Damaged Pavement

Except as noted in this section, requirements of Section 619 of the Standard Specifications, as supplemented by the Thruway Addendum, apply.

Concrete or Composite Pavement: Locations of concrete or composite pavement systems shall be repaired by the Design-Builder in accordance with the Authority's methodologies and repair details. Slab replacements at locations with existing precast pavement shall utilize precast pavement slabs with in-kind thickness.
Asphalt Pavement: Wearing course repairs and/or full depth asphalt sections shall be repaired by the Design-Builder in accordance with the Authority's methodologies and repair details.
Pavement to remain that is damaged by the Design-Builder's operations, whether within or outside the Project Limits, shall be repaired such as to maintain safe and reliable operation during construction, and restored to its original or better condition, at the end of construction.

~~16.3.10~~16.3.11 Subsurface Drainage System

The Design-Builder shall design and construct edge drains, where stipulated within this Project Requirement, and in accordance with the applicable Standards. Subsurface drainage outlets shall not cross roadways. Left- and right-side subsurface drainage systems shall not use a common outlet pipe.
Additionally, the Design-Builder shall evaluate and provide an underdrain system as follows:
A) Underdrain shall be installed where an existing ground water condition needs to be addressed;
B) The proposed pavement traverses an area with high ground water;
C) Where identified as needed by the Engineer or Foundations Lead Designer of record.

~~16.3.11~~16.3.12 Pavement Removal

Obsolete and unnecessary pavement shall be removed and disposed of by the Design-Builder. Pavement removal shall be such as to permit the unimpeded use of the space for the immediate and/or permanent purposes of the affected space. At a minimum, obsolete and unnecessary pavement shall be removed to the top of the subbase. Any pavement to remain that is damaged during pavement removal operations shall be replaced by the Design-Builder. In the absence of the need for treatments associated with specific subsequent uses, disturbed material underlying removed pavement shall be re-compacted to not less than 95% standard proctor maximum density, and then top soiled and seeded.

16.4 PROJECT LIMITS

Project limits are defined as follows:

A. For the ORT Exit Sites and Special Exit 35 the minimum project limits are from the existing Authority gore areas to the intersecting NYSDOT Road or the existing intersecting local roads. The Design-Builder shall meet all current standards, including proper cross slopes and proper drainage. See Part 7, Section 2 for display of project limits.
B. For the interchange locations (11 locations) the minimum project limits are from interstate gore areas to interstate gore areas. Essentially from the existing Authority gore area to the interstate gore areas of the NYSDOT interstate system. In these applications, the gore areas are not defined as the striped gore area but rather the gore areas are defined by the grassy area or where no grassy areas exist, where existing ramp guiderail ends and concrete barrier (positive barrier separation) is required.
C. The mainline gantry locations project limits are defined by the Design-Builder, as required by Section 18 of Part 3 and the requirements under this Section of Part 3.
D. The two remaining special exits are Exits 16 and 17. At Exit 17, the proposed limits are identified by the limits of new guiderail required to be placed. At Exit 16, Harriman, the Project Limits are defined by the Toll Booth removal to the straightening of the alignment via potential striping.

In all situations defined above, project limits do not include necessary guiderail replacements on existing ramps or Work Zone traffic limits or new signage, replacement signage, temporary signage, signage removals, or pavement striping. These effects constitute the work limits at each location, not the project limits.
To provide better clarity relative to project limits; the Terminus locations, the Interchange locations, the ORT Exit Site locations, and the Special Exits 35, 16, and 17 Google images will display the project limits (directive). For any contradiction with the text above, the Google images shall dictate.

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.

The proposed legislative routing at Ripley is being removed. However, single axle tractor trailers need to use Shortman Road, the intersection improvements to the Thruway off ramp to Shortman Road, and the improvements to the intersection of Shortman Road to the Thruway on ramp to travel Northeast. These intersections shall be designed to accommodate a design vehicle of WB-67.

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~~OPEN	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 and install 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. In addition to the BGS, the Design-Builder shall provide a pole so that the Authority can mount a side fired antenna and install a reader and server in a cabinet provided by the Design-Builder. A single lane shall be instrumented with a BGS at each of these locations.

BGS shall include:

- Gate
- Embedded loops
- Controller

BGS System Requirements: ~~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.)

Door King Model # 1601 is provided as an example BGS that satisfies 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.

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 cabinet shall be adjacent to the BGS.

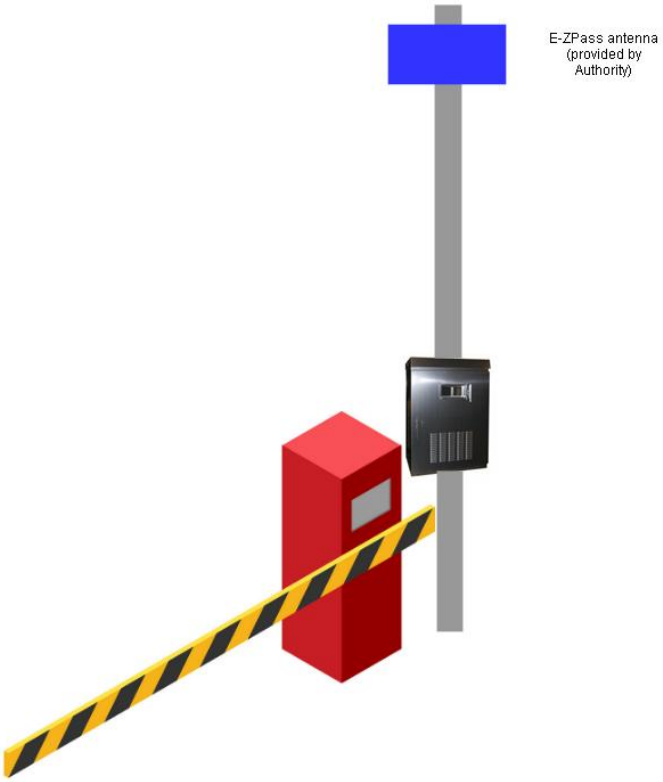
The Design-Builder shall provide power and fiber optic communications to the equipment cabinet. The fiber optic communications cable shall be terminated "SC".

The Design-Builder shall install an appropriate sized 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~~Kapsch VRC 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.

21.8 LANE REQUIREMENTS

21.8.1 General

The Kapsch system is designed as a lane based transaction processor. Each lane is handled individually, it has sensors and cameras that are installed specifically for the lane. There is one exception, which is the nVDC subsystem, which is designed to cover a toll zone (typically one subsystem for north and another for south).

- Equipment heights specified in this section are relative to the pavement in the lane over which the equipment is mounted.
- 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~~.
- Conduit shall not impede access to equipment for installation or maintenance purposes.
- The Gantry shall be grounded.
- A pull-box shall be installed off the shoulder to facilitate installation of the fiber cabling.

The following section contains a summary of each device, followed by a detailed section showing the mounting requirements.

Treadle

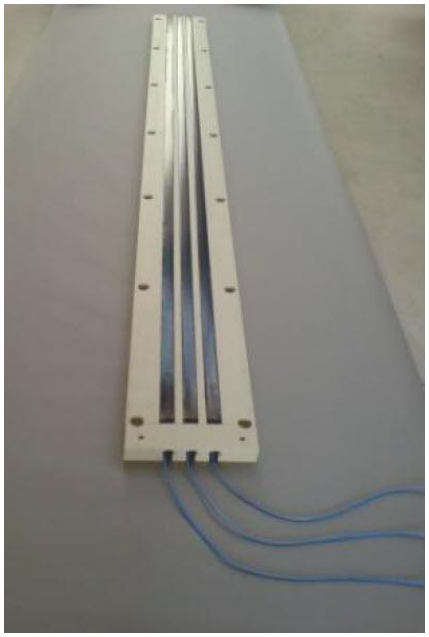


Figure 2

The Design-Builder shall install the Treadle frame in each 12 foot travel lane per specification Installation of Treadle Frame.
Treadle frames shall be centered in each 12 foot lane.
Note on drawing TR-1, “CENTER BAR SHALL BE FIELD CUT & GROUND BY THE INSTALLATION CONTR…” This modification shall occur on both ends of the treadle frame before the dummy treadle is installed.
A “dummy treadle” supplied by the Design-builder shall be installed into the treadle to allow traffic to travel over the treadle frame and remains until Kapsch installs their treadle during their installation period.

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.

Exit 49 is an exception to the minimum 6' wide right shoulder requirement due to limitations associated with the cross culvert approaching the intersection. The existing right shoulder widths can be maintained at this Exit location.

Concrete slabs containing the treadle shall be 22 inch reinforced Portland cement concrete (PCC). Concrete slabs containing the loops shall be 13" 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. Refer to Part 7, Section 4 for details of the concrete slab details.~~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 (%).

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 and 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.

22.3.4 Electromagnetic Loops

The Design-Builder shall procure and install all loops in all ORT Entry and Exit lanes.

The Design-Builder shall install loops on the shoulders in asphalt per specification 680.5860—25.

The Design-Builder shall install loops in 12 foot lanes in concrete per specification 680.5830—25.

The loop dimensions in shoulders with width < 12 feet shall be 4 feet by 4 feet.

The loop dimensions in 12 foot travel lanes shall be 6 feet x 6 feet.

Loops shall be centered.

The Design-Builder shall install pull boxes off the shoulder to facilitate loop wire installation.

The Design-Builder shall install an appropriately sized conduit from the pull box to the ORT Communication Building. The lead-in wire from the pull boxes to the ORT Communication Building is 14 gauge Belden Part #8720.

When installed in asphalt pavement, loops shall be installed 5 inches deep. When installed in concrete pavement, loops shall be fastened to the top of the reinforcing mat.

22.3.5 Treadle

The Design-Builder shall procure and install all Treadle Frames and fiber optic strips in all 12 foot exit lanes. See Part 6, Directive drawings~~NYSTA Standard sheets~~ TR-1 and TR-2 for 10 foot treadle frame details. Note on drawing TR-1, "CENTER BAR SHALL BE FIELD CUT & GROUND BY THE INSTALLATION CONTR…" This modification shall occur on both ends of the treadle frame before the dummy treadle or the MSI Fiber strips are installed.

The Design-Builder shall install the Treadle frame and fiber optic strips in each 12 foot exit travel lane per specification Installation of Treadle Frame and Insert. The Design-Builder shall install the MSI Fiber strips, part # SL 3 EZ TREADLE3042-3-1-XX, where XX is one of 50, 75, or 100 and denotes in the length in meters. These strips shall be installed in each treadle frame per the specification.

Treadle frames shall be centered in each 12 foot lane.

A "dummy treadle" must be installed into the treadle frame when the MSI Fiber strips are not yet installed to allow traffic to travel over the treadle frame.

In the pavement area where the treadle frames are installed, there shall be no transverse or longitudinal joints in the travel lane.

If there is a change in cross slope in the pavement, the change in cross slope shall be located between treadle frames.

For instrumented shoulders, the Design-Builder shall cut two individual fiber strips, part # SL PUR 215-1-XXX-PE (XXX = length in meters), into each shoulder. Each strip shall be installed in the same location as the 1st and 3rd strip in the adjacent 12 foot exit travel lane.

A pullbox shall be installed off the shoulder to facilitate installation of the fiber cabling.

Mfg part #	SUB	Description	Source	Quantity Required	Installation Responsibility
AS615-UDK Hybrid	N	Single Lane Overhead Vehicle Classifier, 120V, Hybrid	OSI LaserScan.	1 per 12' lane, 1 per instrumented shoulder	~~TA~~DB
19471022-9	N	AS Mounting Kit	OSI LaserScan.	1 per laser scanner	DB
9291011-9-XXX	N	AS Power Cable, 120V, XXX feet. Part number depends on gantry design.	OSI LaserScan	1 per laser scanner	DB
9291010-29-XXX	N	AS RS422 Communications Cable, 120V, XXX feet. Part number depends on gantry design.	OSI LaserScan	1 per laser scanner	DB
81000143-9	Y	RS422 Surge Supressor	OSI LaserScan	1 per laser scanner	TA
9301000-9	N	Beam Finder	OSI LaserScan	10 for entire project	DB
Reference Design Specifications	Y	Loops	Never-Fail Loop System Inc. or Patriot Detection, Inc.	2 per lane, 2 per instrumented shoulder	DB
EDI LMD301 TS	Y	SINGLE CHANNEL LOOP DETECTOR WITH DELAY & EXTENDING TIMING & SOLID STATE OUT	Eberle Design, Inc.	1 per loop	TA
IZA-800ORT-L-TWY	N	ORT Camera	Inex Zamir	2 per instrumented lane	TA

Exit 19 Kingston

The Design Builder shall construct an ORT zone at one of two locations at the north end of the existing toll plaza: location 1 requireswith 2 lanes and a shoulder in each direction; location 2 requires 3 lanes and a shoulder in each direction with both options requiring positive protection barrier for a Design Speed of 40 MPH – Semi-direct Connecting Ramp. Prior to the Go Live Date the Design Builder shall:

A. Retain the existing northern most Maintenance Driveway. Provide a temporary access If conflicts with Toll Zone Construction.

B. Construct a new two-way driveway for TruckTandem Access (WB-67) vehicles from NYS RTE 28 into the Maintenance Facility, connecting to the Tandem lot and Maintenance Yard.

B.C. Restripe ramp from roundabout to NYS Route 28 West to provide two (2) through lanes, beyond the proposed driveway. Install yield sign at slip ramp to Route 28 West.

After the ORT toll system becomes functional Design Builder shall remove the existing toll plaza and connect the ORT Toll Zone to Rte 28 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. Construct a driveway connection from the parking lot south of the TUB to the maintenance yard, employee parking lot, and the tandem truck lot Close the driveways from the ramp to the maintenance facility, tandem truck lot and the employee parking lot.

C. Entering traffic

   a. The northbound entering lanes shall transition from the existing 3 lanes and shoulder entering the plaza from Rte 28 and transition to 2 lanes with shoulder south or north of the ORT Zone depending on the ORT Zone location chosenat the south limit of the ORT zone.

D. Exiting Traffic

   a. The 2 southbound exit lanes shall widen to 3 lanes after the toll zone and continue as 3 lanes to meet the existing 3 lanes at the slip ramp to RTE 28 west

E. Complete installation of positive protection barrier and delineators.

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

Exit 20E Saugerties East

The Design Builder shall construct an ORT zone within the limits shown on the concept plan a minimum of 1 lane and a shoulder in each direction and a 4 foot median 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 32 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

   · Provide 1 lane and shoulder.

C. Exiting Traffic

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 one (1) lane to match lane configuration at intersection approach.~~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 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:

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 positive barrier protection~~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 positive barrier protection, delineators~~, and~~ striping, and rumble strips.

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:

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.

At Interchange 23, where the off ramp from the Thruway system meets Route 9W, a new signal system was developed by the NYSDOT for work to be done in 2019. After discussing and the understanding of where this Design-Build project is going to attempt to rectify the potential congestion at this intersection after toll booths get removed, it was decided this work shall be included under this contract. The Design-Builder shall be responsible for the complete build out of the new signal system. The current drawings provided are no longer 100% accurate as they do not account for the double left (new movement) and the adjustment and modification of the slip ramp ~~to the slip ramp~~ to Route 9W South. The Design-Builder shall redesign the southern portion of the supplied design drawings taking into account the Design-Builder's design of the double left to Route 9W north and footprint modification of that area. The traffic signal mast arms~~eas~~ shall be State supplied, the conduit for the bridge crossing shall be State supplied, and the generator transfer switch shall be State supplied. The mast arm base plate has been drilled and its orientation may change based on the Design-Builder's design of the intersection. The footing shall be designed and constructed to compensate for the potential reorientation of the mast arm. Design-Builder can locate the Controller cabinet beyond the Authority's chain link fence line, if necessary.

All existing mast arms, signal heads, and cabinets shall be salvaged and made available for NYSDOT, Region One Traffic, to pick up from the Albany Division storage area. The storage area for this equipment will be designated after work has begun at the Interchange 23 site. See Engineering Data, Part 7, Section 24 for the signal drawings that were originally designed based on the existing conditions and requires modification by the Design-Builder.

All costs associated with this work is to be included under the misc. item on WPS Form for Interchange 23.

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.

The interchange 23 double left turn installation, the extended slip ramp to Rte. 9W South, and all the traffic signal work shall be completed prior to "AETC Go Live" date to prevent excessive queues and to better manage traffic control while traffic is still stopping at the toll booths and paying tolls.

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 particular Interchange work as well as other Parts of Engineering Data. A gated controlled access is required from the Washington Avenue driveway entrance to the Tandem Lot.

Interchange 24 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 West and South ramps split, and the location allows enough area for vehicles to essentially U-turn.

Interchange 25 – The Authority expects a low level of service when All Electric Cashless Tolling "goes live" at this location. The Thruway entering the I-890 interstate narrows and the Curry Road ramp onto I-890 presents issues. Once again, the Design-Builder shall design additional signage to attempt to properly alert motorists in advance so that there may be a reduction in merge movements. No Tandem Lot here. Additional work such as crack sealing, pavement repairs, etc., as with all these interchange locations may be required as per of Engineering Data, Part 7 - Section 14.

Interchange 25A – Issues with Tandem Lot access and single trailer trucks accessing the local roads is problematic. As shown on the proposed legislative Tandem routes, this location is different. Due to limited ROW the proposed route shown in Part 7 – Engineering Data, Section 3 is the only avenue to provide access for Tandems to the Tandem Lot. The Design-Builder is responsible for this design and construction. An acceleration lane must be incorporated so that Tandems entering I-88 to enter the Thruway system can merge at reasonable speeds. Also, the Tandem Lot driveway entrance requires modification.

Interchange 34A - At this location there is concern with the Tandem Lot entrance to access the proposed legislative Tandem Route. An acceleration lane shall be designed and constructed so that Tandems do not present a safety concern and Tandems can reach a reasonable speed to merge into anticipated higher speeds of traffic. The Park and Ride at this location is scheduled to be closed and the access to and from the Park and Ride lot shall be removed. A minimum of 15' shall be removed between the shoulder and the closed Park and Ride Lot.

Interchange 36 – This location is similar to other interchanges. There is required legislation to accommodate Tandem movements. The Tandem Lot entrance to the traffic accessing I-81 is anticipated to be at higher speeds requiring an acceleration lane leading into traffic to allow Tandems to reach reasonable speeds to merge with free flowing traffic to utilize the proposed legislative route.

Interchange 39 - This location is somewhat unique in that ~~the Exiting Tandem Lot is to be closed and~~ a new Park and Ride~~Tandem~~ Lot is to be constructed in the location as shown on the concept plans in Part 6. This new ~~Tandem~~Park and Ride Lot is a requirement, as well as a proper driveway to provide for access in and out, lighting, and an area of~~in~~ the ~~Tandem for a~~ Park and Ride Lot that provides for a minimum of~~accommodations requiring~~ 52 parking spaces properly striped. The Park and Ride Lot ~~and the Tandem Lot~~ shall be properly delineated with signing~~,~~ and striping ~~and/or other means to minimize the mixing of cars and Tandems~~.

The existing Tandem Lot is to remain at Interchange 39. This lot shall essentially function as a Tandem "makeup" lot. Single trailers shall enter from off the Thruway System and drop off single trailers or pick up a second trailer to form a tandem and then enter the interchange area to directly access the Thruway System Mainline. The concept plan for this location was redeveloped to show the existing Tandem Lot, the new Park and Ride Lot, both with ingress and egress.

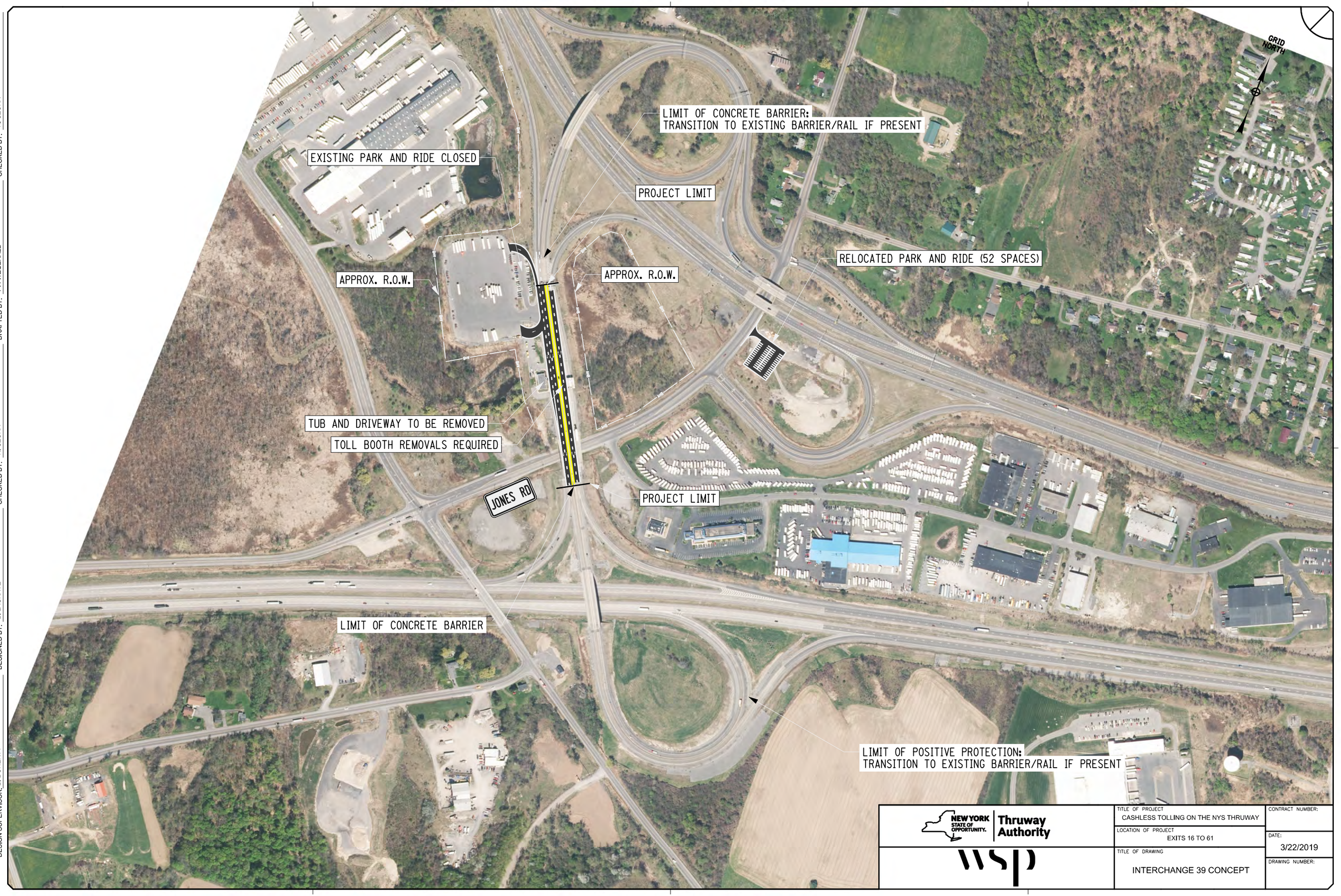
Interchange 44 – This location appears to be relatively straight forward. The Design-builder shall design and construct proper tapers, merge conditions, striping to provide clear and distinct signage so travelers can properly align with roadway alignments (lanes) to reduce merging movements in a confined (short) area. No Tandem Lot is at this location. With TUB removal, the pavement areas shall be reduced, if not eliminated.

Interchange 45 – This location has a Tandem Lot and requires an acceleration lane from the Tandem lot so Tandems can merge at reasonable speeds to access the proposed legislative route to reenter the Thruway System. A modified driveway into the Tandem Lot is also required.

Interchange 46 – This location has a Tandem Lot and requires an acceleration lane/transition so that the Tandems can reach reasonable speeds to safely merge with higher speeds in the interstate-to-interstate connection. Design-Builder shall do modifications within the Authority's Maintenance/ State Police areas such as closure of and removal of driveway entrance, and installation of gate-controlled access.

Interchange 47 – This location requires more work within the Authority Maintenance area than most other interchange(s) due to Tandem Lot access and Maintenance facilities access. Driveway access improvement for access to the Tandem Lot and Maintenance facilities is required. An acceleration lane/transition for Tandems to access and merge appropriately into anticipated higher speed traffic to utilize the proposed legislative routes is required. Backside gated control access is required at this location.

All interchanges listed above have concept plans, and other requirements in Part 3 – Project Requirements and it is the responsibility of the Design-Builder to assemble all information to provide for a complete solution, meeting all applicable current standards.



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

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

NEW YORK STATE OF OPPORTUNITY. Thruway Authority

wsp

TITLE OF PROJECT: CASHLESS TOLLING ON THE NYS THRUWAY	CONTRACT NUMBER:
LOCATION OF PROJECT: EXITS 16 TO 61	DATE: 3/22/2019
TITLE OF DRAWING: INTERCHANGE 39 CONCEPT	DRAWING NUMBER: