

EXECUTION VERSION

I-395 Project

Exhibit C-3

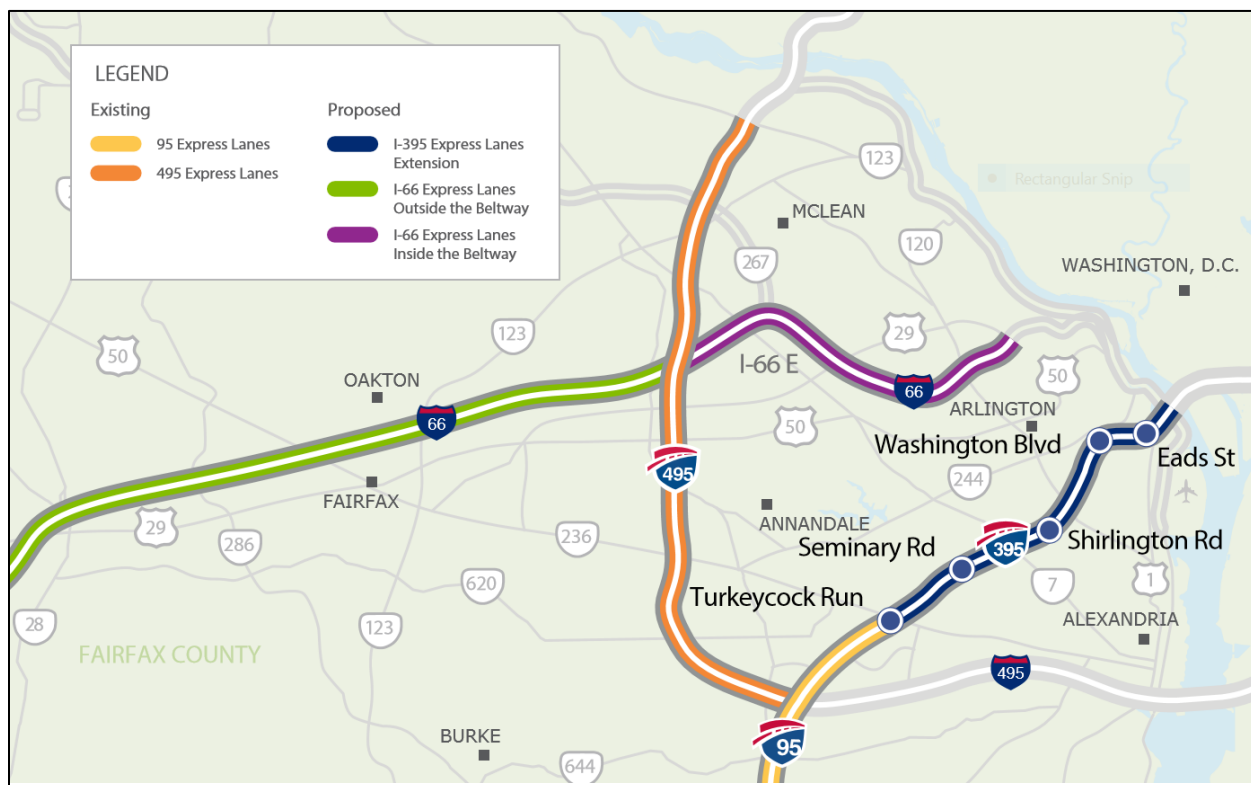
Technical Requirements

Attachment 1.0a

395 Express Lanes Scope of Work

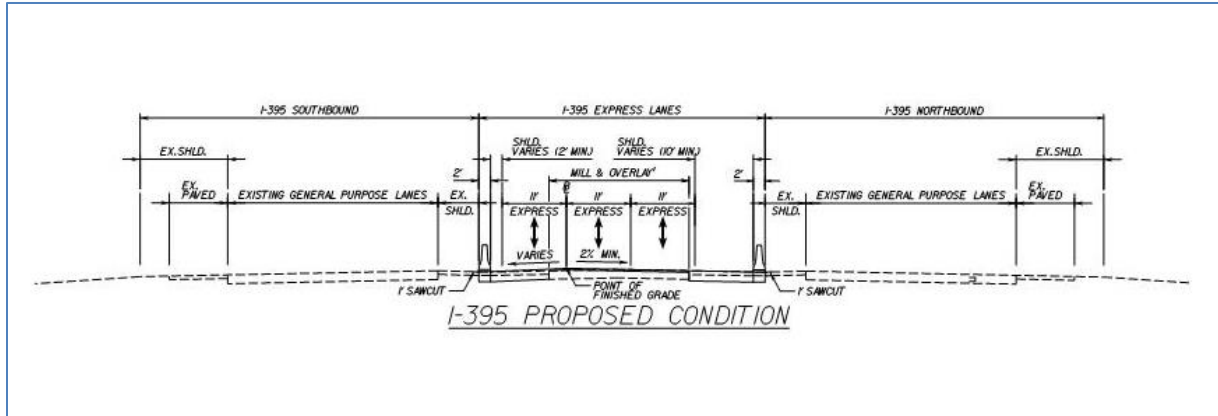
395 EXPRESS LANES SCOPE OF WORK

The 395 Express Lanes is a 7.7 mile extension of the existing 95 Express Lanes in Fairfax County, the City of Alexandria, and Arlington County, Virginia. As shown below, the 395 Express Lanes will extend along Interstate 395 (I-395) from the current northern terminus of the 95 Express Lanes at Turkeycock Run, near Route 236 (Duke Street) in the south, to the 14TH Street Bridge in the north. I-395 currently operates with a variable three to four general purpose lanes in each direction and two barrier-separated reversible High-Occupancy Vehicle (HOV) lanes in the center of the roadway.



The primary objective of the 395 Express Lanes is to convert the existing HOV lanes on I-395 to three High Occupancy Toll (HOT) lanes, which can be used by HOV 3+ vehicles for free, and by other permitted vehicles for a fee (toll). The completed 395 Express Lanes will be subject to the same operating rules and regulations as the existing 95 Express Lanes, and when complete the two will operate as a single, fully-integrated 95 Express Lanes facility. The Scope of Work for the 395 Express Lanes includes, but is not limited to the following:

- Reconfiguration and reconstruction of the two existing HOV lanes to three HOT lanes between Turkeycock Run (current terminus of the 95 Express Lanes) and to just south of the Eads Street interchange as shown in the roadway section below and in the RFP Conceptual Plans (included in this scope of work as Appendix A). Roadway construction work includes traffic control, barrier replacement, bridge repairs, drainage and pavement modifications, signing, pavement markings and roadway lighting;



- Construction of modified entry and exit reversible connections to the HOT lanes at Eads Street and roadway improvements along Eads Street and South Rotary Road,
- Installation of a comprehensive Traffic Management System (TMS),
- Installation of an electronic toll collection system (Tolling System),
- Signage, traffic signal and ITS enhancements within the 395 Express Lanes and on local approach roadways to I-395, and
- Improvements to facilitate improved traffic flow within the Pentagon Reservation.

Access to and egress from the 395 Express Lanes will be provided via dedicated entry and exit points from the adjoining arterial network. The entry and exit points are at the following locations:

- Interchange entry and exit points at Turkeycock Run,
- Seminary Road,
- Shirlington Circle,
- Washington Blvd. (Route 27),
- Eads Street, and
- Northern Terminus

395 Express Lanes Management, Quality and Safety

The Design-Builder shall be responsible for the overall management and administration of the 395 Express Lanes, including but not limited to:

- Developing and maintaining a project schedule and managing the adherence to the schedule, including an on-time Service Commencement and Final Completion,
- Overall performance and management of the project quality and ensuring construction meets the Quality Plans and project requirements,
- Overall project safety, including worker safety and the safety of the traveling public, and

- Effective communication and coordination with the Design-Builder's staff and Subcontractors, Concessionaire, the Department, other Contractors working in the area, and third party organizations.

Roadway Alignment

The conversion of the existing I-395 HOV Lanes to three HOV/HOT lanes will be accomplished by removal and replacement of barriers between the 395 Express Lanes and adjacent I-395 General Purpose Lanes, reconstructing the existing I-395 HOV Lanes shoulders to full strength pavement, resurfacing the existing traveled way, widening of selected areas, and re-striping the reversible roadway to provide a three-lane section that is similar to the northern section of the 95 Express Lanes.

The basis for the 395 Express Lanes horizontal alignment has already been set after the analysis of numerous alternatives. The horizontal alignment concept presented has been approved by the Department, the Federal Highway Administration (FHWA), and Transurban for use on the 395 Project. The Design-Builder shall provide a 395 Express Lanes alignment design that is consistent with the requirements detailed in Section 3.7.1 of the Technical Requirements.

The posted speed limits will be 65 MPH from the southern project limit to about Army-Navy Country Club Drive (with one exception under the Shirlington Interchange which is posted at 60 MPH for stopping sight distance) and 55 MPH in the northern section of the project.

Pavement

The Design-Builder shall collect appropriate data for geotechnical evaluation and prepare a Geotechnical Report for the Concessionaire's approval. The Design-Builder shall be responsible for obtaining any Regulatory Approvals required for any borings needed in performance of the Design-Builder's geotechnical investigation.

The Design-Builder shall perform pavement related work, including but not limited to the following:

- Demolition and removal of existing pavement and subgrade, including undercut as required,
- Install temporary pavement as needed for Maintenance Of Traffic,
- Reconstruction of existing shoulder pavement,
- Pavement build-up to accommodate new profiles and roadway cross-slopes,
- Milling and Overlay, and
- Pavement Repairs

Toll and Traffic Management System (TTMS) Roadside Equipment

The Design-Builder shall design and construct four toll point locations. The four required locations are strategically located to cover traffic movements. Toll Points TG-P-1, TG-P-2, and TG-P-3 cover the entire roadway, while Toll Point TG-P-4 covers the northbound roadway only. Roadway elements associated with the toll locations include at least the following:

- Toll gantry structures, integrated roadside units, and associated TTMS infrastructure at each toll location that are designed, procured and installed in time to meet all Level A and B testing and toll point turnover requirements,
 - Sheets No. CC(F4) and CC(F4A) of the RFP Conceptual Plans show two different options for toll gantry layouts and loading. Prior to the issuance of NTP, the Concessionaire will select one of the two options. The Design-Builder shall design, procure and construct the selected toll gantry layout and loading option. The 395 Express Lanes Scope of Work shall be inclusive of either of the toll gantry layout and loading options.
- Enforcement bays to support the Virginia State Police efforts. Enforcement bays are required just south of Duke Street, just south of the Seminary Road interchange, north and south of Toll Point TG-P-2, and under the Shirlington Circle interchange,
- Generator sites and associated equipment at each toll location, and
- Infrastructure to support the future use of Vehicle Occupancy Detection equipment shall be installed at Toll Locations TG-P-3 and TG-P-4

The Design-Builder's scope includes, but is not limited to, the following ITS and TMS roadside equipment elements:

- Dynamic Message Signs (DMS) to provide Toll and Driver Information,
- Pan-Tilt-Zoom (PTZ) Closed-Circuit Television (CCTV) and Automated Incident Detection (AID) cameras to provide video surveillance,
- Microwave vehicle detectors to monitor and report in real-time traffic volume, lane occupancy and speed data on the 395 Express Lanes and General Purpose Lanes,
- Roadway gates (and all related systems) at all reversible access points,
- Variable Speed Limit Signs and Lane Use Control Signs that comprise the Lane Use Management System,
- A fully redundant fiber optic communication network to ensure reliability and no single points of failure,
- ITS and TMS roadside equipment cabinets and integrated roadside units,
- A power distribution system with back-up generators and Uninterruptible Power Supplies to support Tolling and Traffic Management Systems, and
- Testing and commissioning of the ITS and TMS roadside equipment with the existing 95 Express Lanes TTMS.

The Design-Builder shall relocate existing Concessionaire and Department TTMS Roadside Equipment located within the 395 Project Right of Way that is affected by construction, including power and communication service to the equipment, and shall ensure that loss of functionality is minimized.

TTMS Work on the Pentagon Reservation and Mark Center Property:

The Design-Builder shall be responsible for designing, coordinating and constructing the TTMS related Work on the Pentagon Reservation and Mark Center, including but not limited to the following:

- Reconstruction of the roadway at the South Rotary Road and Eads Street intersection,

- TTMS roadside equipment along South Rotary Road, Army Navy Drive and the Mark Center, and
- Providing Maintenance of Traffic support to ensure work is completed by minimizing impacts to the existing Pentagon and Mark Center traffic flow and movements.

The Design-Builder shall be responsible for following all rules and regulations, including coordinating necessary permit requirements, on the Pentagon Reservation and Mark Center property.

Systems Integration and Design-Builder Interface

Systems integration will be performed by Transurban (USA), Inc. The TTMS Interface Plan shall identify the responsibilities of the Design-Builder and Transurban (USA), Inc. as they pertain to the 395 Express Lanes TTMS and system integration. Generally, under the TTMS Interface Plan, the Design-Builder is responsible for the management, design, procurement, and construction of the toll gantries and the procurement, installation and commissioning of all TTMS roadside equipment, and necessary supporting infrastructure. Transurban (USA), Inc. will be responsible for Systems Integration, Back Office Systems, Traffic Management System, and the procurement, installation and commissioning of the ETC equipment. The Design-Builder shall provide continuous and effective coordination with Transurban (USA), Inc. throughout the duration of the project.

395 Express Lanes Bridges

No new bridges or bridge replacements are included as part of the 395 Express Lanes Project. The Design-Builder shall be responsible for the design, repairs and construction of various existing bridges carrying future 395 Express Lanes traffic as shown in the RFP Conceptual Plans, including but not limited to:

- A. Mainline Bridges - replacement of bridge barriers/railing systems (includes reconstruction of selected general purpose lane bridge barriers), joint reconstruction at abutments, elimination of joints at piers, deck repairs, milling/hydro-demolition and overlay of selected decks, widening and repairs to approach slabs, widening of one bridge, backwall reconstruction, beam seat repairs and reconstruction, replace bearing pads, clean and paint beam ends and bearings, modifications related to addition of conduit duct bank, installing new deck drain systems, surface repairs and waterproofing of existing barriers, and substructure repairs to the following bridges:
- I-395 over Sanger Avenue,
 - I-395 over West Braddock Road,
 - I-395 HOV & Bus Ramp over Four Mile Run,
 - I-395 over Glebe Road,
 - I-395 over Ramp G (Glebe Road),
 - I-395 HOV over Country Club Road,
 - I-395 HOV over EB Route 27 (Washington Boulevard),
 - I-395 HOV & NBL over Route 27 NBL & Joyce Street,
 - I-395 HOV NB and SB over Ramps CC and CE,
 - I-395 HOV over Fern Street,

- I-395 HOV over Eads Street,
 - I-395 HOV NB and SB over Route 110, and
 - I-395 HOV over Pentagon Access Road.
- B. Ramp Bridges - repairs, including joint reconstruction at abutments, elimination of joints at piers, deck and approach slab repairs, milling/hydro-demolition and overlay of selected decks, beam seat reconstruction, clean and paint beam ends and bearings, surface repairs and waterproofing of curbs and parapets, railing post anchor bolt adjustments, replacing guardrail transitions, and substructure repairs to the following bridges:
- Ramp B over I-395 SBL
 - Seminary Road HOV Bus Ramp
 - Shirlington HOV Bus Ramp
 - Route 27 Reversible Ramp over Joyce Street
 - Ramp G of I-395 NBL over Route 110
- C. Addition of structurally independent, crashworthy ground-mounted 54 inch high pier protection barriers at bridges over the 395 Express Lanes.
- D. Removal of existing sign attachments or supports at three existing bridges.

Additional Work on the Pentagon Reservation Property:

The Design-Builder shall be responsible for designing, coordinating and constructing the Work on the Pentagon Reservation to improve traffic flow, including but not limited to the following:

- Reconstruction of the roadway at the South Rotary Road and Eads Street intersection,
- Additional of two traffic signals and related infrastructure on the Pentagon Reservation, and
- Providing Maintenance of Traffic support to ensure work is completed by minimizing impacts to the existing Pentagon traffic flow and movements.

The Design-Builder shall be responsible for following all Pentagon Reservation related rules and regulations, including but not limited to access, security and storm water requirements and coordinating necessary permits.

Other 395 Express Lanes Structural Work

The Design-Builder shall be responsible for the design, repairs and construction of various existing structures and new structures associated with the 395 Express Lanes as shown in the RFP Conceptual Plans, including but not limited to:

- Removal and replacement of existing substandard guardrails with proposed concrete barriers,
- Repair and/or modification of existing retaining walls,
- Repair and/or replacement of existing damaged concrete barriers to remain,

- Design and construction of proposed overhead sign structures and toll gantries,
- Repair, rehabilitation, and/or modification of existing overhead sign structures,
- Design and construction of proposed light poles and miscellaneous lighting structures,
- Repair and/or replacement of existing lighting structures,
- Design and construction of sound barriers at approved locations,
- Design and construction of TTMS roadside equipment structures, and
- Removal and disposal of existing structures as required.

395 Express Lanes Signing and Pavement Markings

The Design-Builder shall be responsible for the design and construction of roadway signing for all new signs necessary for the safe operations of the 395 Express Lanes. Design-Builder shall replace, reuse, relocate or modify all existing ground mounted and overhead mounted signs and sign structures that are affected by the 395 Express Lanes. Any signing on adjacent roadways beyond the 395 Express Lanes limits that require relocation, replacement, or modification due to the proposed design shall be the responsibility of Design-Builder, including but not limited to signing in the District of Columbia. Existing traffic structures that are impacted by the addition, removal or replacement of sign panels, Dynamic Message Signs, Variable Message Signs or Lane Control Signals, including structures with signage that are outside the project limits, are identified on the Signing and Pavement Marking RFP Conceptual Plans and in Appendix B to Attachment 1.0a as either “Re-use Existing Structure”, “Existing Structure - Analysis Required”, or “Remove Existing Structure”. The specific requirements relating to each type is described in the Technical Requirements. In the event of any discrepancy between the Signing and Pavement Marking RFP Conceptual Plans and Appendix B to Attachment 1.0a, Appendix B to Attachment 1.0a shall take precedence.

The signing design concept will be similar to the 95 Express Lanes signing and utilize purple top caps on all entrance and pricing related signing for the 395 Express Lanes. The signing design shall include a Sign Sequencing Plan and a Sign Unveiling Plan.

The Design-Builder shall design and construct all pavement markings, markers, and delineators as required. All existing pavement markings and markers that do not conform to the final traffic patterns shall be eradicated and removed. E-Z Pass logos at each entry point into the 395 Express Lanes shall be provided as shown in the RFP Conceptual Plans.

Maintenance of Traffic

The Design-Builder shall be responsible for developing and implementing a Maintenance of Traffic Plan that has been approved by the Concessionaire and the Department. The Design-Builder shall integrate the Duke to Edsall Widening project construction and schedule into one safe and effective Maintenance Of Traffic Plan. The Design-Builder shall maintain traffic consistent with the agreed upon Transportation Management Plan and project requirements throughout the duration of the 395 Express Lanes.

Lighting

The Design-Builder shall be responsible for the design and construction of continuous lighting of the 395 Express Lanes and associated ramps. Existing lighting can be reused and considered part of the continuous lighting of the 395 Express Lanes and ramps if demonstrated to be in good working order.

Service panels shall be designed for the new lighting power requirements. Existing service panels may be upgraded as needed to support lighting requirements as approved by the Department and Concessionaire. Separate meters shall be provided for 395 Express Lanes lighting needs.

Public Information and Communication Services

The Design-Builder shall provide the services of a Public Information Manager and adequate staff to support the Concessionaire and the Department on community outreach and information activities. The Design-Builder will have primary responsibility for performing the project-specific day-to-day activities associated with the Design-Build activities.

The Design-Builder will be required to attend and participate in public meetings as needed to provide updated technical information to the public. The Design-Builder will also be asked to work in partnership with the Concessionaire in dealing with property owner issues to ensure a swift result and minimal impact.

Service Commencement

The Design-Builder shall be responsible for the on-time achievement of Service Commencement. All Interim Milestones must be met in order to successfully achieve an on-time Service Commencement. Continual and effective coordination with the Concessionaire, the Department, and the TTMS Contractor will be required prior to the opening of the 395 Express Lanes.

Sound Barriers

The Design-Builder shall be responsible for the design and construction of required sound barriers along the I-395 corridor (and connecting roadways, where applicable). Potential sound barrier locations will be shown in the Draft NEPA environmental document dated August 2016.

The Design-Builder shall provide Permanent noise mitigation and final sound barriers in compliance with the Virginia State Noise Abatement Policy and the Highway Traffic Noise Impact Analysis Guidance Manual. The final sound barrier location(s) and dimension(s) at approved locations will be determined by the Design-Builder based on the final design noise analysis. A final Noise Abatement Design Report (NADR) that covers all sound barrier locations shall be furnished by the Design-Builder.

Drainage and Storm Water Management

The Design-Builder shall be responsible for the design and construction of the integrated storm water conveyance system (including but not limited to culverts, junction boxes, storm sewers, erosion control, sediment control, outfall conveyance channels through the project area) to meet all applicable hydraulic requirements, including current Federal Emergency Management Administration (FEMA), Federal

Highway Administration (FHWA), and VDOT guidelines and standards as described in the VDOT Drainage Manual, Hydraulic Design Advisories and applicable Informational and Instructional Memoranda. The 395 Express Lanes is considered grandfathered under 9VAC25-870-48 in Part II of the Virginia Stormwater Management Protection Regulations and Part II-C applies for water quality control. Performance Based Methods shall be used for determining post construction phosphorous removal and nutrient credit requirements. 9.1 pounds of nutrient credits have been purchased and are available for use on the 395 Express Lanes.

Right of Way

The Design-Builder shall be responsible for all Right of Way (ROW) acquisitions, including dedications and easements (permanent and/or temporary) necessary for the construction and operation of the 395 Express Lanes, including but not limited to, roadway, barrier walls, lighting, TTMS, signing on arterial and local roadways, signals, private utilities, electric services, laydown and material storage sites, etc. All work shall be completed in accordance with the latest VDOT ROW Manual.

Utilities

The Design-Builder shall be responsible for all Utility work necessary for the construction and operation of the 395 Express Lanes, including the identification and avoidance or adjustment (if necessary) of conflicting utilities. Utility work includes all items necessary to provide new services, perform relocation(s) or adjustments and associated coordination with utility owners.

Traffic Control Devices

The Design-Builder shall be responsible for designing, coordinating and constructing traffic signals at the following locations:

- Two new traffic signal locations on Eads Street,
- Modification to traffic signals at the Eads Street and Army-Navy Drive intersection, and
- Two new traffic signal locations on the Pentagon Reservation.

Coordination with Third Parties

The Design-Builder shall be responsible for coordination with the affected public and private entities (third parties) and local jurisdictions necessary for the design and construction of the 395 Express Lanes, including but not limited to the Department, Arlington County, City of Alexandria, Fairfax County, District of Columbia Department of Transportation, Federal Highway Administration, Department of Defense (Pentagon Reservation and Mark Center), National Park Service, and utility owners.

Anticipated Environmental Services

The Design-Builder shall ensure that the environmental commitments and all conditions of regulatory approvals made in the approved NEPA Document(s) are implemented at the appropriate phase of 395

Express Lanes development. The Design-Builder shall be responsible for compliance with pre-construction, construction-related, and post-construction permit conditions.

The Design-Builder shall develop and implement a comprehensive Environmental Management Plan (EMP) Requirements. Additionally, the Design-Builder is responsible for, but not limited to, a Stormwater Pollution Prevention Plan (SWPPP), an Erosion and Sediment Control (ESC) Plan, the Stormwater Management (SWM) Plan; and performing the Work in accordance with these approved plans and related specifications and standards.

APPENDIX A – RFP CONCEPTUAL PLANS

- RFP Conceptual Plan Sheets (11”x17”) *dated July 18, 2016*
 - o Plan Revision 1 *dated September 28, 2016 containing sheets:*
 - Structure and Bridge Repair plan sheets 13, 14, 21 – 32, 34, 35
 - o Plan Revision 2 *dated October 20, 2016 containing sheets:*
 - 1B(1), 1B(2), 1G(1), 1G(2), 1G(5), 1G(14), 1G(18), 2A, 2B, 6, 12, 13, 15 – 19, 25, 26, 27, 33(3), CC1B(1), CC7, CC9, CC10, CC11, CC27, CC35, CC35A, CC37, CC(D2), CC(D2A), CC(D2B), CC(D2C) CC(D4), CC(E2A), CC(E2D), CC(F1), CC(F4), CC(F4A), CC(F5), CC(G1), CC(G2), CC(G3), CC(G4), CC(J2), CC(J4), CC(J5), CC(J6), CC(J20), CC(K1), CC(K2), CC(K3), CC(K11), CC(K12), CC(L2), CC(L5), SP1, SP(A4), SP(A5), SP(A6)
 - Structure and Bridge Repair plan sheets 43 – 54
- RFP Conceptual Cross Sections (11”x17”) *dated July 18, 2016*
- Roadway Roll Plots *dated October 20, 2016*
 - o Roll Plot Revision 1 *dated November 9, 2016 containing:*
 - Roll Plots 1 and 2
- Signing and Pavement Marking Roll Plots *dated October 20, 2016*

APPENDIX B – SCOPE MODIFICATIONS (JANUARY 9, 2017)

- Sign Structure Changes
- AID Camera Deletions
- Lane Control Signal (LCS) and Variable Speed Limit Sign (VSLS) changes
- Red-lined Drawings Showing Signage Changes