

I-64 Hampton Roads Express Lanes (HREL) Segment 4C Volume I

VDOT

State Project No.: 0064-114-374 P101, R201, C501

Federal Project No.: NHPP-064-3(522)

Contract ID Number: C00117841DB111

May 12, 2022



ATTACHMENT 4.0.1.1

I-64 HREL Segment 4C

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Offerors shall furnish a copy of this Technical Proposal Checklist, with the page references added, with the Technical Proposal.

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	II
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.7 (Form C-78-RFP)	Sections 3.7, 4.0.1.1	no	A-05
Letter of Submittal	NA	Sections 4.1		1
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	1
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	1
Authorized representative's original signature	NA	Section 4.1.1	yes	1
Declaration of intent	NA	Section 4.1.2	yes	1
120 day declaration	NA	Section 4.1.3	yes	1
Point of Contact information	NA	Section 4.1.4	yes	1
Principal Officer information	NA	Section 4.1.5	yes	1
Interim Milestone and Final Completion Date(s)	NA	Section 4.1.6	yes	1
Any Unique Milestone dates introduced by the Offeror	NA	Section 4.1.7	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.8	no	A-06
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.9	no	A-010
Commitment to achieving six (6%) DBE goal	NA	Section 4.1.10	no	1
Confirmation on commercial and professional registration	NA	Section 4.1.11	no	1

ATTACHMENT 4.0.1.1

I-64 HREL Segment 4C

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
requirements				
Offeror's Qualifications	NA	Section 4.2		2
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	2
Organizational chart with any updates since the SOQ submittal clearly identifying the changes	NA	Section 4.2.1	yes	3
Organizational chart shall identify the names of the individuals selected for the positions of Deputy Key Personnel (if applicable), Environmental Compliance Manager and Contractor Incident Management Coordinator.	NA	Section 4.2.1	yes	3
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.1	yes	2
Design Concept	NA	Section 4.3		5
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	7
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	12
Project Approach	NA	Section 4.4		20
Environmental Management	NA	Section 4.4.1	yes	21

ATTACHMENT 4.0.1.1

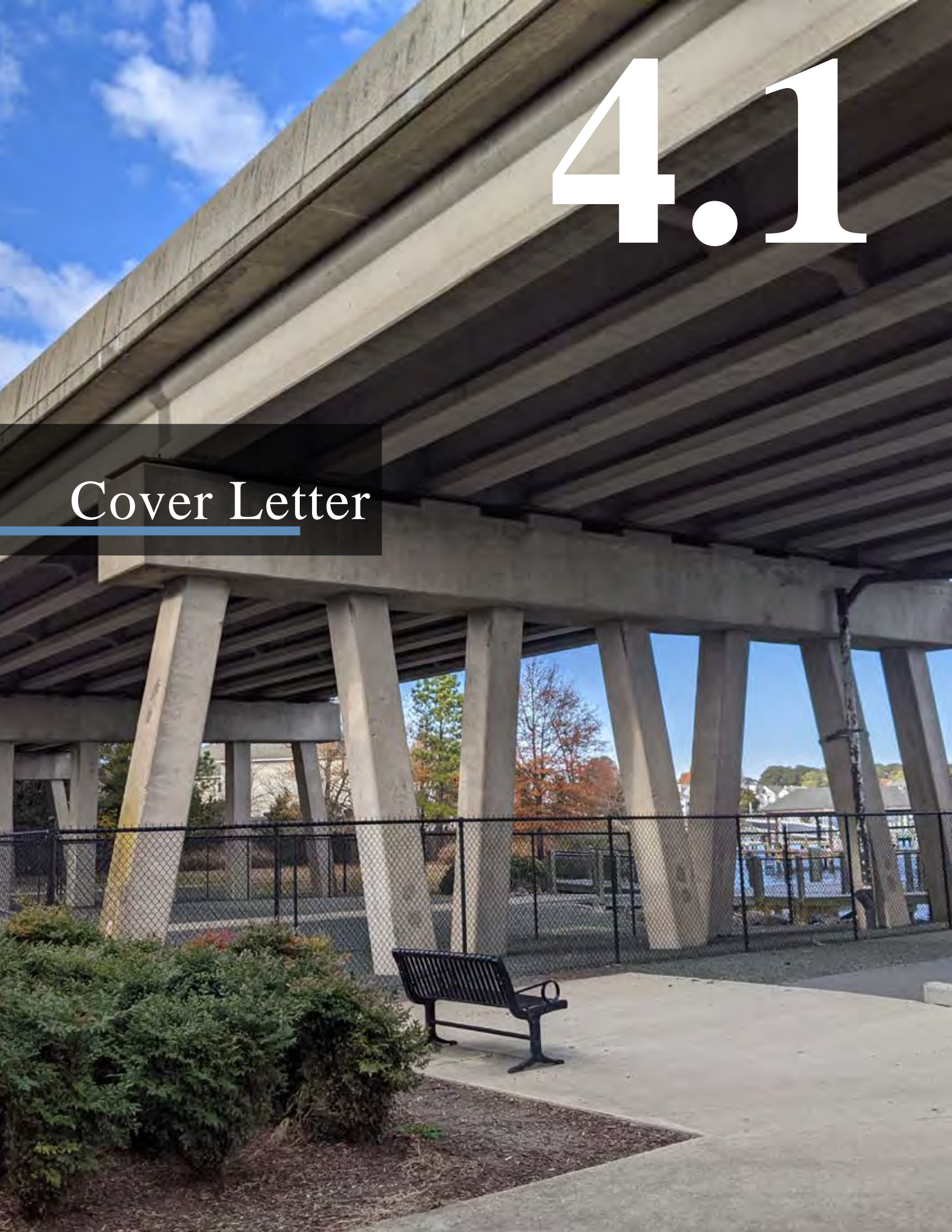
I-64 HREL Segment 4C

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Utilities	NA	Section 4.4.2	yes	24
Geotechnical	NA	Section 4.4.3	yes	29
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	32
Construction of Project	NA	Section 4.5		35
Sequence of Construction	NA	Section 4.5.1	yes	35
11" x 17" graphics demonstrating proposed Sequence of Construction.	NA	Section 4.5.1	yes	75-80
Transportation Management Plan	NA	Section 4.5.2	yes	45
11" x 17" graphics demonstrating proposed MOT for each phase of Sequence of Construction.	NA	Section 4.5.1	yes	75-79
Proposal Schedule	NA	Section 4.6		S-1
Proposal Schedule	NA	Section 4.6	no	S-23
Proposal Schedule Narrative	NA	Section 4.6	no	S-1
Proposal Schedule in electronic format	NA	Section 4.6	no	Separate file

4.1

Cover Letter



May 12, 2022



Alternative Project Delivery Division
Virginia Department of Transportation (VDOT)
1401 E. Broad Street, Annex Building, 5th Floor
Richmond, Virginia 23219
Attention: Suril R. Shah, P.E. DBIA (APD Division)

Dear Suril Shah,

Wagman - Fay SE, a Joint Venture (The JV), is pleased to submit our Technical Proposal for Phase 2 of the I-64 Hampton Roads Express Lanes (HREL) Segment 4C Design-Build (DB) project. In accordance with the Letter of Submittal requirements for section 4.1, we offer the following additional information for review:

4.1.1 Legal Name and Address Wagman - Fay SE, a Joint Venture, with an address of 3290 North Susquehanna Trail, York, PA 17406, is defined as the legal entity who will execute the contract.

4.1.2 Offeror's intent It is the intent of the Wagman - Fay SE, a Joint Venture, if selected, to enter into a contract with VDOT for the project in accordance with the terms of this RFP.

4.1.3 Validity of Offer Wagman - Fay SE, a Joint Venture, declares that the offer represented by the Technical and Price Proposals will remain in full force and effect for one hundred twenty (120) days after the date the Price Proposal is actually submitted to VDOT ("Price Proposal Submission Date").

4.1.4 Authorized Representative/Point of Contact
Glen Mays, DBIA, Design-Build Project Manager
26000 Simpson Road, North Dinwiddie, VA 23803
P. 804.631.0000 | F. 804.733.6281
Email: gkmays@wagman.com

4.1.5 Principal Officer of the Offeror
Greg Andricos, P.E., President & COO
3290 North Susquehanna Trail, York, PA 17406
P. 717.767.8292 | F. 717.767.5546
Email: gmandricos@wagman.com

4.1.6 Interim Milestone and Final Completion Wagman - Fay SE, a Joint Venture, commit to an interim milestone date of 06/10/2026. Additionally, the JV proposes a final completion date of 12/10/2026.

4.1.7 Unique Milestone Dates Wagman - Fay SE, a Joint Venture proposes to remove all temporary river impacts (trestle, barges, cranes) by February 28, 2026 providing benefit to all Federal, State, Local and Recreational Stakeholders.

4.1.8 Executed Proposal Payment Agreement The Wagman-Fay, SE, a Joint Venture team has included an executed Proposal Payment Agreement which can be found on page A-06.

4.1.9 Debarment Forms Debarment forms are included on page A-010 as required in the RFP.

4.1.10 Commitment to DBE Participation Wagman - Fay SE, a Joint Venture, is committed to achieving a six percent (6%) DBE participation goal for the entire value of the contract.

4.1.11 Team Registration Requirements Statement Wagman - Fay SE, a Joint Venture, confirms that all commercial and professional registration requirements set forth in the offeror's statement of qualifications, including, but not limited to those requirements of the Virginia State Corporation Commission (SCC) and the Virginia Department of Professional and Occupational Regulations (DPOR) are complete and accurate and that the JV, and business entities on our team, remain in good standing with all applicable regulatory bodies and are eligible to provide the services required of the Project.

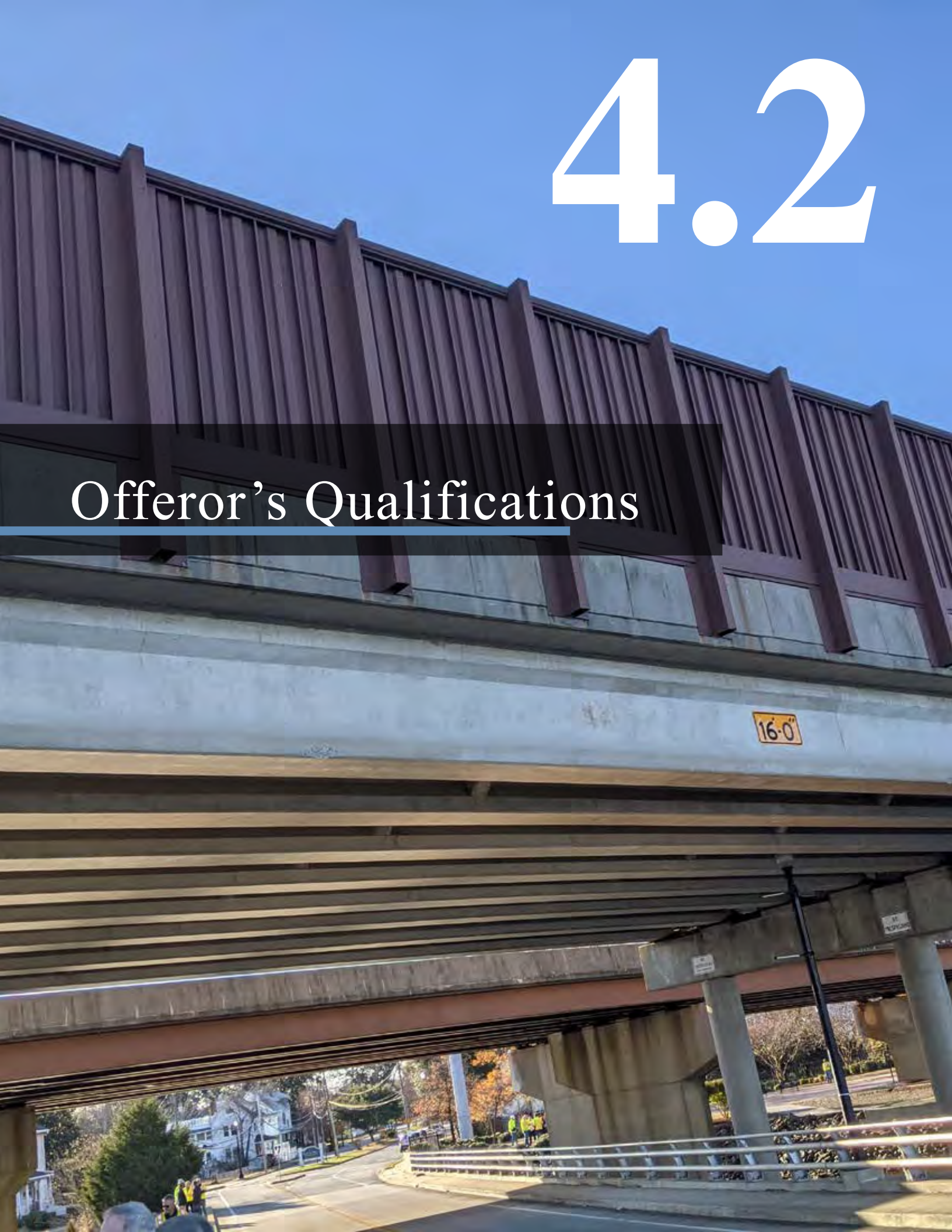
The JV has a successful history serving Virginians on numerous projects. As a single, integrated DB Team, we will design and construct this project and ensure the greatest opportunity for success, including the potential for an expedited delivery. Thank you for the opportunity to submit our Statement of Qualifications.

Respectfully,
Wagman - Fay SE, a Joint Venture


Glen Mays, DBIA, - Design-Build Project Manager

4.2

Offeror's Qualifications



4.2 Offeror's Qualifications

4.2.1 Confirmation of True and Accurate Information

The offeror confirms the information in the SOQ remains true and accurate with the following exceptions.

In reference to Part 1 - Section 11.4 of the RFP documents, Wagman-Fay-EXP Design Build Team (DBT) confirms that the Key Personnel have not changed since the submission of the Statement of Qualification (SOQ) on June 29, 2021. However, the organization chart and narrative have been updated to identify the following new key positions as required per Part 1 – Section 4.2.1 of the RFP documents. As a clarification, the DBT had already anticipated and included these two (non-Key Personnel) positions with the SOQ submittal. The following includes the summary of personnel changes as approved by VDOT on May 4, 2022:

Environmental Compliance Manager (ECM; Non-Key Personnel at the Time of SOQ Submission)

| Ian Westbrook (Wagman Heavy Civil, Inc., voluntary termination of employment) | Proposing Julia Conners (WSSI, Inc) as Key Personnel per Part 2 – Section 2.4.9.2: As ECM, Julia will actively participate in development of the project-specific Environmental Management Plan (EMP). She will be responsible for proper implementation of the EMP, including conformance of the construction means, methods and associated activities with all the applicable environmental requirements, project-specific environmental permit conditions, and all other applicable contractual commitments and requirements such as the environmental commitment requirements and applicable Road and Bridge Specifications.

Contractor Incident Management Coordinator (CIMC; Non-Key Personnel at the Time of SOQ Submission)

| Proposing Danny Plott (WF) as the replacement for George Polizos (Polizos and Company Communications) as Key Personnel per Part 2 – Section 2.4.9.2: As CIMC, Danny will actively participate in development of the project-specific Incident Management Plan (IMP) and will be responsible for implementation of it. As the main Point-of-Contact, Danny will be on site for the duration of the construction and will respond to all incidents within the project limit. Danny is familiar with and has significant experiences with application of National Incident Management System (NIMS) principles and practices to projects with similar characteristics and complexities.

Additionally, we have modified the organizational structure of the following individuals in non-Key Personnel roles:

Hydrologic & Hydraulic/ River Mechanics | Beth Wangaard, P.E. (EXP U.S. Services, Inc., voluntary termination of employment) | Replaced by Brian Olson, PE (EXP U.S. Services, Inc.) with over 12 years of relevant experience.

Railroads Engineering/ Coordination | Nate Morriss, P.E., S.E. (EXP U.S. Services, Inc., voluntary termination of employment) | Replaced by John Flint, PE (EXP U.S. Services, Inc.) with over 41 years of relevant experience.

Demolition Expert | Les Carpenter (WF, voluntary termination of employment) | Replaced by Clint Filges (WF) with over 25 years of relevant experience.

In addition to the personnel changes above, The DBT has added Wetland Studies and Solutions, Inc. (WSSI) to the Team after the submission of the SOQ. This organizational change has been approved by VDOT per the letter of Conflict of Interest Determination dated May 4, 2022. Section 4.8 Appendix II includes the pertinent approval email and letter.

4.2.2 Organizational Chart and Revised Narrative

As previously mentioned, The DBT had already included the ECM and CIMC positions in the organizational structure as part of SOQ submittal. As such, the chain-of-command and the functional relationships among the positions as described in our SOQ narrative remains unchanged, true, and accurate. With the introduction of the two new key positions (ECM and CIMC), we have further enhanced the following communication lines given the roles and responsibilities of CIMC as follows:

- CIMC reports directly to DB Project Manager and has direct lines of communication to the Public Outreach Coordinator, VDOT Incident Management Coordinator, Emergency Agencies and Virginia State Police.

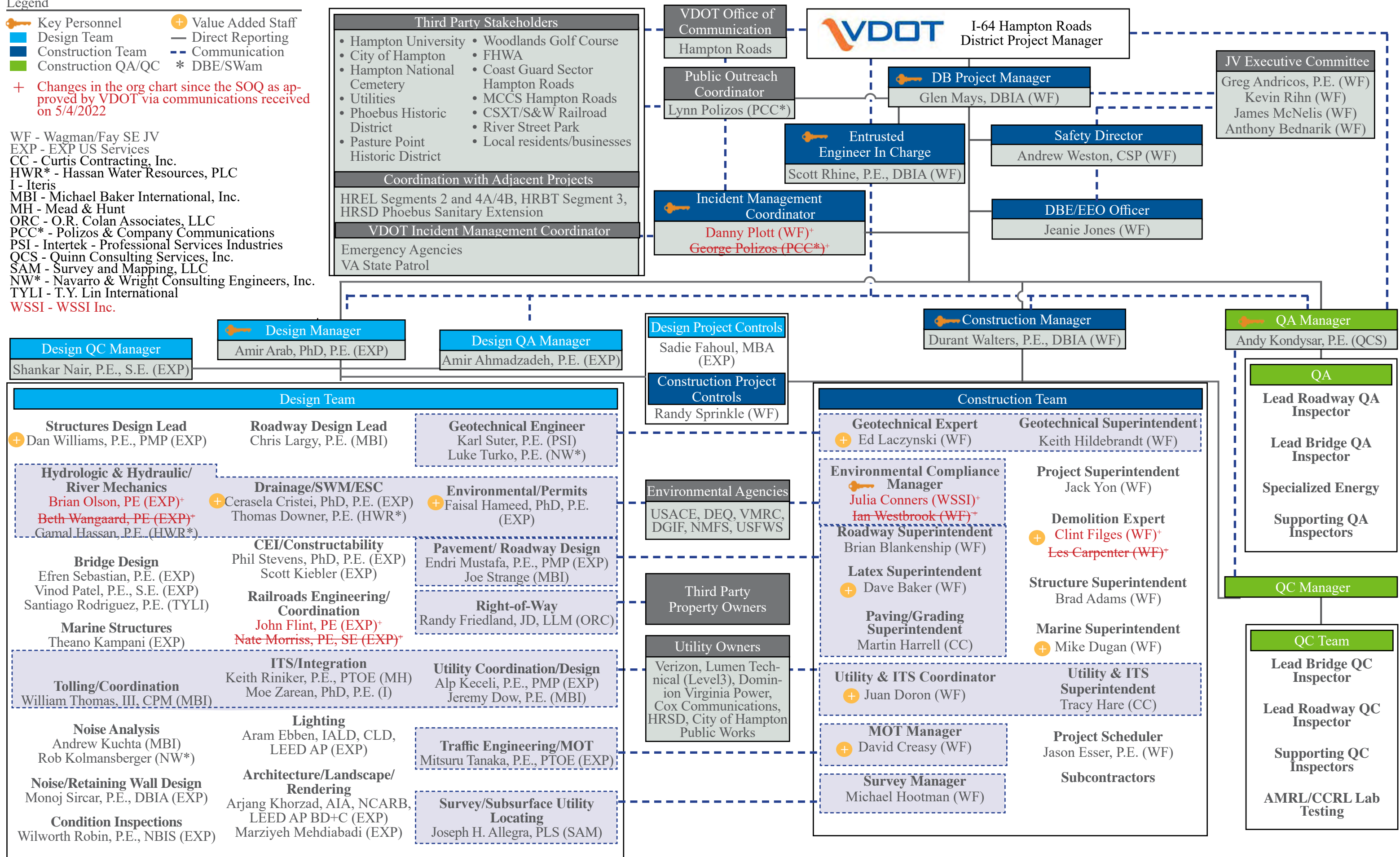
Provided on the following page is our revised SOQ Organization Chart with red-line markups of the proposed changes previously approved in writing by VDOT.

Legend

- Key Personnel
- Design Team
- Construction Team
- Construction QA/QC
- Value Added Staff
- Direct Reporting
- Communication
- DBE/SWam

+ Changes in the org chart since the SOQ as approved by VDOT via communications received on 5/4/2022

- WF - Wagman/Fay SE JV
- EXP - EXP US Services
- CC - Curtis Contracting, Inc.
- HWR* - Hassan Water Resources, PLC
- I - Iteris
- MBI - Michael Baker International, Inc.
- MH - Mead & Hunt
- ORC - O.R. Colan Associates, LLC
- PCC* - Polizos & Company Communications
- PSI - Intertek - Professional Services Industries
- QCS - Quinn Consulting Services, Inc.
- SAM - Survey and Mapping, LLC
- NW* - Navarro & Wright Consulting Engineers, Inc.
- TYLI - T.Y. Lin International
- WSSI - WSSI Inc.



4.3

Design Concept



4.3 Design Concept

One of the most important factors influencing the success of Design-Build (DB) projects is the degree to which the selected team can work together to efficiently deliver high-quality design and construction. Our design team lead, EXP, is fully integrated with construction partners, Wagman and Fay SE, in this design-build joint venture (DBT). This alignment of interests positions us to deliver management and production resources to design and construct the Project, as the success of the DBT is tied to delivering the project on time and on budget. The DBT will advance the current design level into a final design that meets or exceeds the design standards for the I-64 HREL project, including the requirements of the RFP and addenda. Our goals align with the project priorities: reducing cost, enhancing the design concept, full constructability, design quality assurance, and a project approach that limits risks to VDOT, the public and all stakeholders.

This section demonstrates how our team structure and procedures will deliver an efficient and enhanced design aligned with our project priorities.

The DBT has evaluated the preliminary plans and information provided in the RFP documents and has developed a design concept that will benefit the end users in terms of safety, operations, schedule, construction, public acceptance and long-term sustainability. In addition to demonstrating compliance with the RFP, we will improve and enhance the RFP Conceptual Plans.

The DBT has experience in working on multiple DB projects. We have worked together throughout the proposal phase as an integrated design and construction team to classify, calculate and cultivate design solutions that offer VDOT the most value for the project. This I-64 HREL project will benefit from the DBT's collective experience and the existing relationships within our team both as companies and individuals. Moreover, the DBT will require no learning curve throughout any phase of the project as we are an established, well-functioning team.

With regards to VDOT's \$60M fast-track Route 7 Battlefield DB Project "Wagman's well-planned, orchestrated and coordinated effort and their customer-service approach led to the early completion of the project... and within budget."

Sanjeev Suri, P.E. | VDOT NOVA District

Design Approach

Our design approach mitigates risks to the traveling public and stakeholders. In accordance with best practices for DB project delivery we developed an initial risk register using VDOT's Risk Management Worksheet to identify and address risks and challenges early, when they can most easily be avoided or mitigated. This risk register will be updated, monitored, and reviewed with VDOT throughout the project. We have performed

preliminary constructability, environmental, and safety reviews on the design developed to date which will reduce impacts to all stakeholders, and reduced impacts. We have carefully considered the means and methods, resources and management approach applicable to this project. The DBT's engineering and construction tools, coupled with our wealth of DB experience and innovative approach will deliver a quality project on schedule and within budget.

Design coordination among the team members is essential and our Design Manager, Amir Arab, PhD, PE, with his hands-on leadership, will ensure that this is carried out effortlessly. He will rely upon EXP's design best practices to deliver a quality and on time design. Amir has extensive knowledge and experience on bridge structures and will be supported by all the discipline leads.

Our design approach including all design elements:

- Meets or exceeds all requirements as listed in the Design Criteria included in the RFP Documents.
- Have been carefully coordinated and optimized in order to enhance overall project safety and further minimize maintenance efforts and costs.
- Limits construction final built conditions wholly within the right of way limits as shown on the RFP Conceptual Plans with the exception of the temporary construction and utility easements as necessary.
- Does not require Design Exceptions and/or Design Waivers unless they are already identified or included in the RFP, Addendums or Approved ATC No. 1.
- The DBT design improves the horizontal geometry of the roadway near EB Hampton River Bridge, which may require revisiting the design exception No. 7.

In the successful delivery of DB projects of similar scope and complexities, the DBT has developed and refined numerous administrative and management best practices that will be employed in the delivery of this project including:

- Efficient and streamlined scope validation process
- Discipline-specific task forces that regularly meet for the purposes of coordination, design quality assurance and quality control, cross-disciplinary coordination and timely resolution of VDOT and Stakeholder comments
- Design services and support during construction including collaboration with Entrusted Engineer In-Charge (EIC), discipline leads, and Quality Assurance Manager (QAM) to track and address RFIs, NDCs, FDCs, NCRs, and deficiencies
- Formal partnering to establish and maintain open and honest communication among all team members including timely resolution of issues at the lowest level

Volumes I and II include specific details related to our additional enhancements to our design concept, project approach and construction. Several of these design enhancements are summarized in Table 4.3.1.

Table 4.3.1 Conceptual Roadway Plans and Description Enhancements

Benefits & Enhancements	Safety For The Traveling Public, Construction Operations And The Environment						
	Operations And Coordination With Adjacent Projects						
	Schedule						
	Constructability With Focus On Constrained Work Zones In An Urban And Marine Environment						
	Outreach, Stakeholders and Public Acceptance						
	Future Inspection, Maintenance And Asset Performance						
	Cost						
Roadway	Our design includes improvements to the existing geometric deficiencies including: 1) lengthening of the crest vertical curves at the overpasses resulting in improvements in the Stopping Sight Distance, and 2) matching the vertical alignment of the ramps with the revised vertical profile, and 3) correcting the ramp alignment and gore areas at Mallory St.	✓	✓	✓	✓	✓	✓
	The DBT has established a new (raised) vertical alignment for B-673 I-64 EBL providing additional 3 in of vertical clearance.	✓	✓	✓	✓	✓	✓
	Horizontal alignment of B-673 I-64 EBL has been shifted towards the existing B-674 I-64 WB Bridge, resulting in: 1) increasing the radii of the connecting curved approach alignment and thus, improved superelevation and sight distance and 2) increasing the clearance between the proposed B-673 I-64 EBL Bridge and the Dominion power lines from the RFP requirement of 32'-11" (min.) to over 60 ft.	✓	✓	✓	✓	✓	✓
	Optimizing alignment of EBL and WBL Bridges increases continuous open space by 3,500 SF available along River Park.	✓	✓	✓	✓	✓	✓
Pavement	Through advance pavement analysis and design during the RFP phase, the DBT has already identified several locations throughout the corridor where pavement reconstruction has proven to be more feasible than overlay.	✓	✓	✓	✓	✓	✓
	During the RFP phase, the DBT has already developed a preliminary geotechnical investigation plan that includes any gaps in available data and areas that have a CBR below 9 and/or do not meet the other suitable material requirements.	✓	✓	✓	✓	✓	✓
	During the RFP phase, the DBT has already performed a preliminary analysis for a design life of 30 years to validate VDOT provided pavement structure for areas of widening/new construction accounting for the existing site conditions.	✓	✓	✓	✓	✓	✓
	During the RFP phase, the DBT already completed a thorough analysis to determine the structural adequacy of the existing shoulders for limited use during MOT phasing and the improvement/strengthening solutions based on the existing site conditions and the DBT constructability reviews.	✓	✓	✓	✓	✓	✓
	During the RFP phase, the DBT has already developed preliminary details with logistical applications for positive subgrade drainage.	✓	✓	✓	✓	✓	✓
SWM	The DBT has developed a drainage and SWM systems that discharges to the existing major outfalls, resulting in ZERO SWM ponds. Furthermore, our design considers future effects of climate and coastal changes .	✓	✓	✓	✓	✓	✓
	Our proposed drainage and SWM systems have minimal environmental impacts and require low future maintenance.	✓	✓	✓	✓	✓	✓
	Our proposed design eliminates the need for trench drains or other devices outside VDOT typical standards , reducing concerns with functionality, maintenance, and long term performance.	✓	✓	✓	✓	✓	✓
	Our proposed design efficiently combines open and closed drainage systems.	✓	✓	✓	✓	✓	✓
Context Sensitive Solutions	DBT has analyzed the corridor view shed and developed preliminary 3D renderings and visualizations and a schematic landscaping plan in the River Park area.			✓	✓	✓	✓
	Clear soundwall panels will be used on the bridges over the Hampton River and other noise barrier walls will be aesthetic including the FISH pattern.		✓	✓			
ITS	DBT has accounted for the use of Cellular Communications as needed and to ensure no interruption to the existing communications during construction.	✓		✓	✓	✓	✓
	Our proposed design utilizes the existing Segment 1 infrastructure which optimizes future asset management for Lighting, Signing & Marking and ITS components where feasible	✓	✓	✓	✓	✓	✓

4.3.1 Conceptual Roadway Plans and Description

4.3.1.1 Conceptual Roadway Plans

Provided below is an overall description of the characteristics and proposed design concept for the roadway, pavement, stormwater management and drainage, retaining and noise barrier walls, and ITS as well as the design enhancements compared to the RFP Design. Please refer to Volume II for the proposed roadway plans and exhibits.

4.3.1.2 Roadway Design Approach and Enhancements

The DBT will adhere to all design requirements identified in the Technical Requirements Section 2.2 “Mainline and Other Roadway Improvements” and the major design criteria summarized in Attachment 2.2 “Roadway Inventory and Major Design Criteria”.

The DBT also acknowledges the design exceptions and waivers identified in the Technical Requirements Section 2.1.3 “Design Exceptions and Design Waivers”. As directed in the Technical Requirements the DBT assumes that the waivers and exceptions identified in the RFP will be approved by FHWA and VDOT.

Vertical Alignment Optimization (Enhancement 1)

In general, the mainline vertical alignment follows the existing alignment for both Eastbound (EB) and Westbound (WB) directions, including the overpasses which are in crest vertical curves with sags in between the overpasses.

The main controlling factor during the optimization and development of the mainline vertical alignments was the parameters for the overlay. Within the Technical Requirements Sections 2.6.1 “Pavement Requirements”, both the EB and WB lanes are to receive a minimum of 1.5” of overlay; this parameter was used while optimizing the profile. Adhering to this requirement dictated the following:

- The proposed grade be above the existing grade by a minimum of 1.5” at all overlay locations
- Because of the need to match the existing bridges, the superelevation of the existing cross section is corrected
- The design profile for both the EB and WB alignments are raised slightly.

Raising the profile outside of the existing overpass bridges has allowed for lengthening of the crest vertical curves at the overpasses resulting in an approved Stopping Sight Distance at these locations. Several sag vertical curve lengths are reduced to reduce the amount of pavement overlay while remaining in compliance with the project Design Criteria.

The vertical alignments of the ramps are also revised to match the revised vertical profile. Given the existing site constraints, we have taken advantage of many opportunities to optimize the roadway geometry including the ramp profiles. As such, the

relationship between the mainline and all ramps and gore areas has been enhanced in comparison to the RFP design improving functionality and safety.

Vertical Alignment Optimization of B-673 I-64 EBL over Hampton River (Enhancement 2)

Our comprehensive and iterative design process which included cross-disciplinary coordination, the DBT has optimized the vertical alignment for the referenced structure resulting in significant enhancements as listed below:

- *By optimizing the EB vertical profile we are providing an additional (3in) of vertical clearance over River Street.*
- Improved the vertical clearance over the Hampton River Branches including the navigational channel in comparison to the existing conditions.
- Optimize the EB vertical alignment reducing the height of substructure elements originally proposed by the RFP concept.
- The optimization of the referenced segment of the EB vertical alignment allows the use of embankment supported roadway between the Hampton River Branches and therefore less linear footage of bridge relative to the RFP Design with taller piers.

Horizontal Alignment Optimization to Correct Existing Deficiencies (Enhancement 3)

We evaluated the project’s horizontal alignments for compliance with standards. Through this review process there were several deficiencies identified. However, these deficiencies will be corrected through design and are described below:

- A deficiency in the westbound alignment was identified at the series of reverse curves that begins at WB Sta.1779+87.47 . This deficiency was remedied by eliminating the reverse curves coming from the back tangent, adjusting the ahead tangent bearing and adding a compound curve near the WB Mallory on-ramp at approximate Sta. 1784+00.
- Relative to this mainline deficiency, the offset to the Mallory WB On-Ramp alignment was further assessed and the tie in for this ramp has been corrected.
- The offsets from the mainline to the ramp alignments were evaluated and the ramp alignments have been corrected to achieve the standard offsets.
- The ramp alignments and gores throughout the project have been optimized by our proposed design.

Horizontal Alignment Optimization of B-673 I-64 EBL over Hampton River (Enhancement 4)

Through a comprehensive and iterative design and constructability analyses which included cross-disciplinary coordination including the Construction Leads, the DBT has developed an optimized horizontal alignment by partially shifting the I-64 EB Bridge horizontal alignment towards the existing

B-674 I-64 WB Bridge. The resulting enhancements are summarized as follows:

- Shifting the EB alignment towards the existing B-674 I-64 WB Bridge allowed the DBT to increase the radii of the connecting curved approach alignment and improve the superelevation and the sight distance from the existing condition.
- Shifting the EB Bridge and roadway alignment towards the existing B-674 I-64 WB Bridge results in significantly increased clearances between the proposed B-673 I-64 EBL Bridge and the Dominion Power lines from the RFP minimum requirement of 32'-11" to 60 ft minimum.
- The proposed horizontal alignment meets the RFP clearance requirement of 12 ft between the B-673 I-64 EBL Bridge and B-674 I-64 WB Bridge over Hampton River.
- Eliminated nine (9) piers and 400 ft of bridge spans on B-673 I-64 EBL Bridge.
- The DBT has restations the proposed baseline as follows: Start EB shift/restation at 714+82.02, end 4C tie to Seg 1/HRBT @ Sta. 785+76.76 Start WB fix at 1779+87.47 match HRBT @ 1786+42.86

4.3.1.3 Pavement Design Approach and Enhancements

During the RFP phase, the DBT performed advance analysis and pavement design and assessment as integrated part of the alternative analyses, constructability reviews, cost and schedule projections and risk management and mitigation. The following includes a pertinent summary:

Balance of Pavement Reconstruction vs. Overlay (Enhancement 5)

During the RFP phase, the DBT evaluated the existing conditions including the irregularities in the existing pavement cross slope versus the requirement to adhere to the superelevation parameters, and the need to maintain the minimum overlay depth. The DBT has additionally identified the need for relatively thick overlay areas throughout the project and carefully established the limits of full pavement replacement vs. overlay. As a result, the DBT has further designated several locations throughout the corridor where pavement reconstruction has proven to be more feasible than overlay. This is a considerable enhancement to the project improving the service life and reducing future maintenance efforts and cost.

Mitigation of the Unsuitable Materials (Enhancement 6)

A high strength subgrade is paramount to building a long-lasting pavement structure. The DBT will analyze all data to provide a strong subgrade,

meeting RFP Requirements, which will also be used as a stable platform for the construction of the subsequent pavement layers. The DBT has reviewed the preliminary geotechnical investigation results provided in the RFP, including the additional data from previous projects within the project limits. The CBR data from the preliminary investigation shows values above the minimum requirement of 9 as stated in the Technical Requirements. *Based on our extensive review of all existing data at this stage, soils at the pavement subgrade elevation do not include high plasticity or organic soils. Additionally, the highest swell percentage of 1.2% was below the 5% requirement. The primary driver to classifying soils as unsuitable would be low CBR values, soft, and/or overly moist soils.*

There are some data points (four with a CBR closer to 6 and one just below at 8.8) that do not meet the requirement and we anticipate that there will be some isolated areas that will require treatment to increase the subgrade CBR to a minimum value of 9. We have created a preliminary geotechnical investigation plan to fill in any gaps in data and verify the subgrade CBR throughout the project in order to locate and improve all areas that have a CBR below 9 and/or do not meet the other suitable material requirements as outlined in the RFP, such as more than 5% organic material, exhibiting more than 5% swell, CH, MH, OH, and OL per USCS, and other requirements in RFP technical requirements section 2.6.4.

The DBT will follow the RFP requirements and VDOT MOI Chapter 3 for all areas where unsuitable materials are encountered. These areas will be treated by excavating and replacing unsuitable materials in the top 3 feet (and 2 feet beyond the outside edge of shoulders) below the subgrade or if accepted by VDOT Materials Engineer via chemical stabilization of the top 12" of the subgrade as outlined in VDOT MOI Chapter 3 Section 309.04.

In addition to CBR values along the corridor, the DBT also investigated the distribution of the near surface subgrade soil SPT N60-values in the 1st and 2nd SPT intervals along the alignment since they are an index of strength and field behavior under traffic.

A mathematical relationship (published by TRB, Issue 1219, in 1989) was used to correlate the SPT N-value and in-situ CBR to have a better understanding of any areas that may have soft soils. Using the CBR results, SPT N-values, and all other unsuitable material parameters per the TR, our team has identified all areas that potentially require subgrade improvement and evaluated remediation efforts such a remove and replace, scarify and recompact, and/or cement stabilization.

Borings showing SPT N_{60} values in the 1st and 2nd intervals

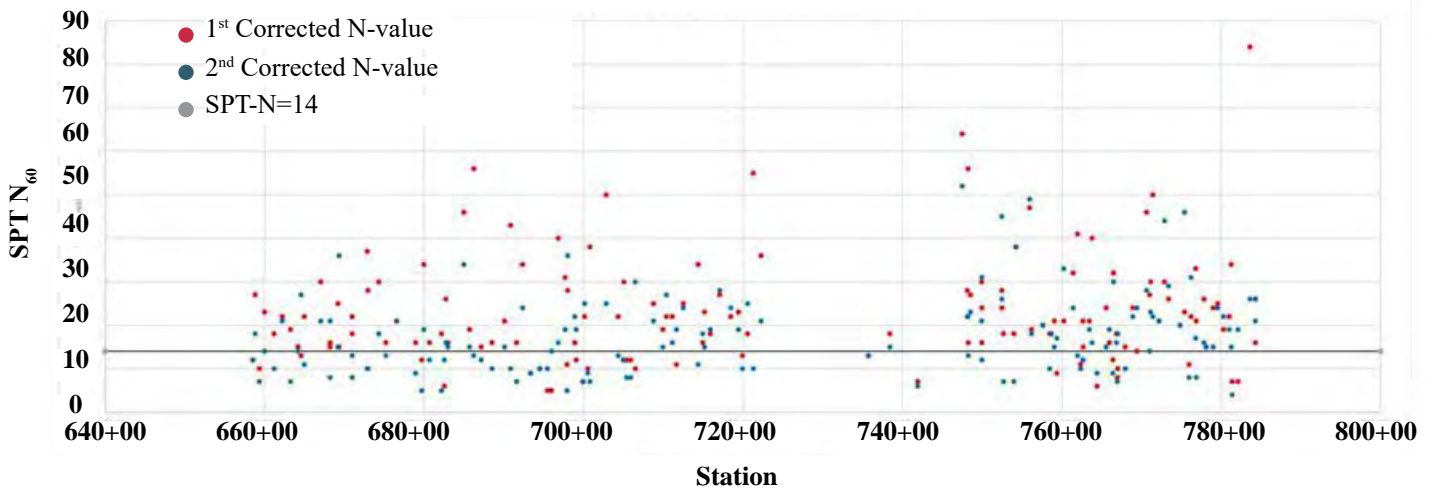


Figure 4.3.1.2.1: Borings showing SPT N_{60} Values

Widening Sections (Enhancement 7)

The DBT has performed a preliminary analysis for a design life of 30 years to validate VDOT provided pavement structure for areas of widening/new construction. The design was performed following VDOT MEPDG User Manual and using AASHTOWare Pavement ME version 2.2.6. Following the preliminary findings, the target distresses were met using VDOT prescribed pavement structure. During final design, an updated design will be performed to validate VDOT prescribed recommendations, and a final pavement design report will be provided following all RFP, TR, and VDOT MOI Chapters 3 and 6 requirements. The DBT has already performed this thorough analysis in order to enhance the MOT stages and durations, construction schedule projections, work zone and public safety.

Temporary Shoulders Rehabilitation (Enhancement 8)

During the RFP phase, the DBT already performed a thorough analysis to determine the structural adequacy of the existing shoulders for use during MOT phasing. All available geotechnical investigation information was used during this preliminary analysis that was performed per AASHTO '93, VDOT MOI chapter 6, and TR parameters. A temporary pavement design was also evaluated. Preliminary findings showed shoulder strengthening is needed in areas that will be used for MOT in order to perform per VDOT requirements and this is included in our proposal.

Besides safety and schedule improvements, the temporary rehabilitation of the shoulders will be a value-added service life enhancement at the final built condition.

Subgrade Drainage (Enhancement 9)

One critical item when designing pavement structures involves proper drainage considerations. It is critical that there are no wet areas (blocked water) within

the pavement structure that can cause detrimental premature failures of pavements. The DBT has successfully implemented positive subgrade drainage for highway widenings with similar complexities, such as VDOT's Transform 66 outside the Beltway DB project. As such underdrains (VDOT Standard UD-4s) will be placed along widened areas of I-64 and the subgrade of these widened sections will be sloped so that the drainage layer will drain towards the UD-4s. Additionally, the DBT will follow all other requirements as specified in the TR section for underdrains.

All pavement designs, underdrains, subgrade materials, and pavement layer materials will follow VDOT Road and Bridge Standards, VDOT specifications, and VDOT Drainage Manual.

The above preliminary assessment and design targets will lead to improved safety, schedule, cost, constructability, service life improvements, enhanced future operations and lower maintenance efforts and costs.

4.3.1.4 Drainage Design Approach and Enhancements

The DBT has developed a preliminary design for the new drainage system in compliance with the local jurisdiction, VDOT Drainage Manual, and Virginia Stormwater Management Program.

The proposed design is based on a model-based approach to our drainage design methods, allowing an analysis of all requisite 24-hour storm events and varying outfall conditions by evaluating the hydraulic grade line throughout the duration of a storm event. Drainage areas will be delineated, and sewer system capacities have been preliminarily evaluated to confirm adequacy during the temporary and final development condition. The proposed storm drainage system is an efficient balance of open and (mainly) closed systems that will integrate the existing drainage system and ensure that adequate conveyance capacity is provided with our design.

The Roadway Drainage, Stormwater Management and Water Quality, Erosion and Sediment Control, Culvert Design, and Complex 2D Hydrodynamic Coastal Modeling and Scour Analysis is based on the applicable governing standards, procedures, and applicable software listed below:

- Pooled Fund Study, Tidal Hydraulic Modeling for Bridges (Development of Hydraulic Computer Models to Analyze Tidal and Coastal Stream Hydraulic Conditions at Highway Structures), Ayers Associates, 2002, technical supervision provided by FHWA
- DitchSoftVA | InletSoftVA | PipeSoftVA
- Stormwater Management Model, EPA SWMM 5.1 (PCSWMM)
- Hydraulic Tool Box 5.1.4, August 2021 (FHWA)
- SWMSOFT VA computer program
- CulvertSoftVA computer program
- HEC-RAS 6.1 computer program (USACE)
- FHWA publications; HDS-6, HDS-7, HEC-11, HEC-17, HEC-18, HEC-20, HEC-23, HEC-25
- Surface Water Modeling System (SMS) 13.1, FHWA

Drainage, Stormwater Management (SWM) & Water Quality (BMP) Approach (Enhancement 10)

The DBT's approach for the SWM and BMP design is constrained within the allowable project right of way, and satisfies all project roadway drainage and stormwater management requirements.

[Our drainage specialist team has integrated the drainage and SWM systems to discharge to the existing major outfalls, which has resulted in the need for ZERO stormwater management ponds.](#)

The DBT has developed a design that utilizes multiple innovative drainage and SWM practices to ensure compliance with the Part IIC criteria and MS-19 requirements throughout the project such as:

- The DBT has delineated the project-wide stormwater management areas and performed the project-wide water quality requirements calculations which confirmed the RFP requirement and VDOT Credit Purchase of 20.91 lbs/yr. Furthermore, the proposed SWM design will not require purchase of additional Nutrient Credit.
- The DBT confirmed that the grandfather conditions for the stormwater management and water quality calculations applies to this project and has utilized the grandfather condition to design the project-wide stormwater management in compliance with VDOT and DEQ requirements.
- For water quantity compliance, the DBT proposes utilizing combinations of runoff attenuation and offsets of runoff peak discharges, through dynamic drainage systems modeling utilizing PCSWMM (EPA) software.
- To achieve project-wide compliance for the drainage, SWM and BMP requirements, the DBT will utilize the following practical solutions:
 - Apply the 1% rule where possible and when

discharging the project's runoff to existing outfalls/streams.

- Utilize, as applicable, grass swales, water quality grass swales, level spreaders, and treatment trains throughout the project in accordance with DEQ and VDOT regulations and approval.
- Use phased stormwater management during construction based on MOT and construction sequences and through the use of temporary erosion and sediment control measures such as sediment traps/basins and check dams.
- Comply with the project specific Stormwater Pollution Prevention Plan (SWPPP).
- Utilize the available Right of Way (R/W) associated with the project to design any SWM/ BMP facilities and/or introduce runoff attenuation treatment train.

The proposed design has significant enhancements during the construction and at the final-built condition such as no SWM ponds, less environmental impacts, and lower future maintenance efforts and cost. [The DBT has successfully utilized similar SWM and BMP approaches/designs in the Hampton Roads District on projects such as the Wythe Creek Road Improvements \(Route 172, UPCs 13427 & 97715\), which also resulted in the need for ZERO SWM ponds and/or facilities.](#)

Erosion and Sediment Control (ESC) (Enhancement 11)

The DBT has developed a preliminary environmental Management Plan (EMP) including the E&S Control Provisions that will be finalized and implemented by the project Environmental Compliance Manager (ECM), Julia Conners, supported by VADEQ certified SWM and Erosion & Sediment Control (ESC) Plan Reviewers with significant past experience in projects with similar scope and complexities. The DBT's approach is to segregate the construction site's runoff from adjacent facilities which is vital to effective erosion and sediment control during construction. This best practice was successfully employed by the DBT on the MDOT sHA MD 404 Dualization DB project which achieved over \$200,000 of environmental incentives. The DBT will incorporate phased ESC for the proposed roadway project design, in concurrence with the proposed phased construction and MOT. Sediment traps/ basins will be designed and applied as necessary during the different construction phases. Local measures such as insulated turbidity curtains, ditch check dams, temporary seeding, rock construction entrances, silt fences, and drop inlet protection will be integrated into the phased ESC, as applicable.

Julia will integrate the construction team into the design process and performs regular over-the-shoulder workshops and trainings, and performs inspections to ensure the E&S controls are functioning as designed, including regular C-107 inspections. The DBT anticipates at least a two-phase E&S control plan to be required; other phases may

be needed to accommodate segmented construction phasing. A Phase I and II E&S Control Plan will be developed and provided to VDOT for their review and approval. The Plans will contain all sediment on-site in accordance with our E&S plans. The E&S Control Plan will consist of the following: silt fencing and super silt fencing throughout the project as appropriate; sediment traps as required; rock check dams for steep graded slopes; check dams prior to entering existing channels; inlet protection; outlet protection; and turbidity curtain for the work in the River as appropriate. Where possible, clean water bypasses will also be utilized as part of the plan. The E&S Plan will include measures to stabilize and re-vegetate.

**Erosion and Sediment Control (ECS)
 (Enhancement 12)**

The project is located in FEMA Flood Zones AE and VE, which indicates inner-coastal and tidal influenced (FIRM # 5155270026H) flood stages. The DBT has obtained copies of FEMA’s effective hydrodynamic models which will be used as the basis for the Hampton River bridge project and proposed I-64 improvements. Additionally, the DBT will merge recent field survey and bathymetry data to develop and calibrate the 2D hydrodynamic model for the existing conditions utilizing FEMA and VDOT approved software such as HEC-RAS 6.1 or TUFLOW 2D. The DBT has started and will finalize compilation of the tidal and Nor’Easter storms’ data from NOAA Tidal Stations (Chesapeake

Bay Bridge Tunnel, VA - Station ID: 8638863), and utilize FHWA’s Pooled Fund Study, Tidal Hydraulic Modeling for Bridges, to calculate the combined 100, 200, and 500-year storm surge hydrographs for application in the 2D hydrodynamic models. Furthermore, the DBT has preliminarily assessed the applicable sea level rise at the project location for the year 2021 and updated the 100, 200, and 500- year storm surge hydrographs for use in the Post- Construction (proposed) conditions hydrodynamic model. The DBT will use the 200 and 500-year output data from the Proposed Conditions hydrodynamic model to calculate scour depth at the proposed substructure units, in accordance with HEC-18 and HEC-25 (FHWA) scour depth calculation procedures. The DBT will utilize VDOT Drainage Manual, HEC-20, HEC-23, and HEC-11 (FHWA) to design appropriate scour countermeasures at the proposed abutments and roadway embankments. The proposed design of the piers substructure and foundation stability is based on the preliminary scour depths. Finally, the DBT will complete the hydraulic report detailing the hydrologic and hydraulic analyses and procedures, scour depth calculations, floodplain analysis and flood stages, comparison tables ensuring zero backwater impact, and all HEC-RAS 6.1 or TUFLOW 2D hydrodynamic models. HWR will complete the LD 293 and LD 294 forms showing details of the hydrologic, hydraulic analysis, and scour depth calculation.

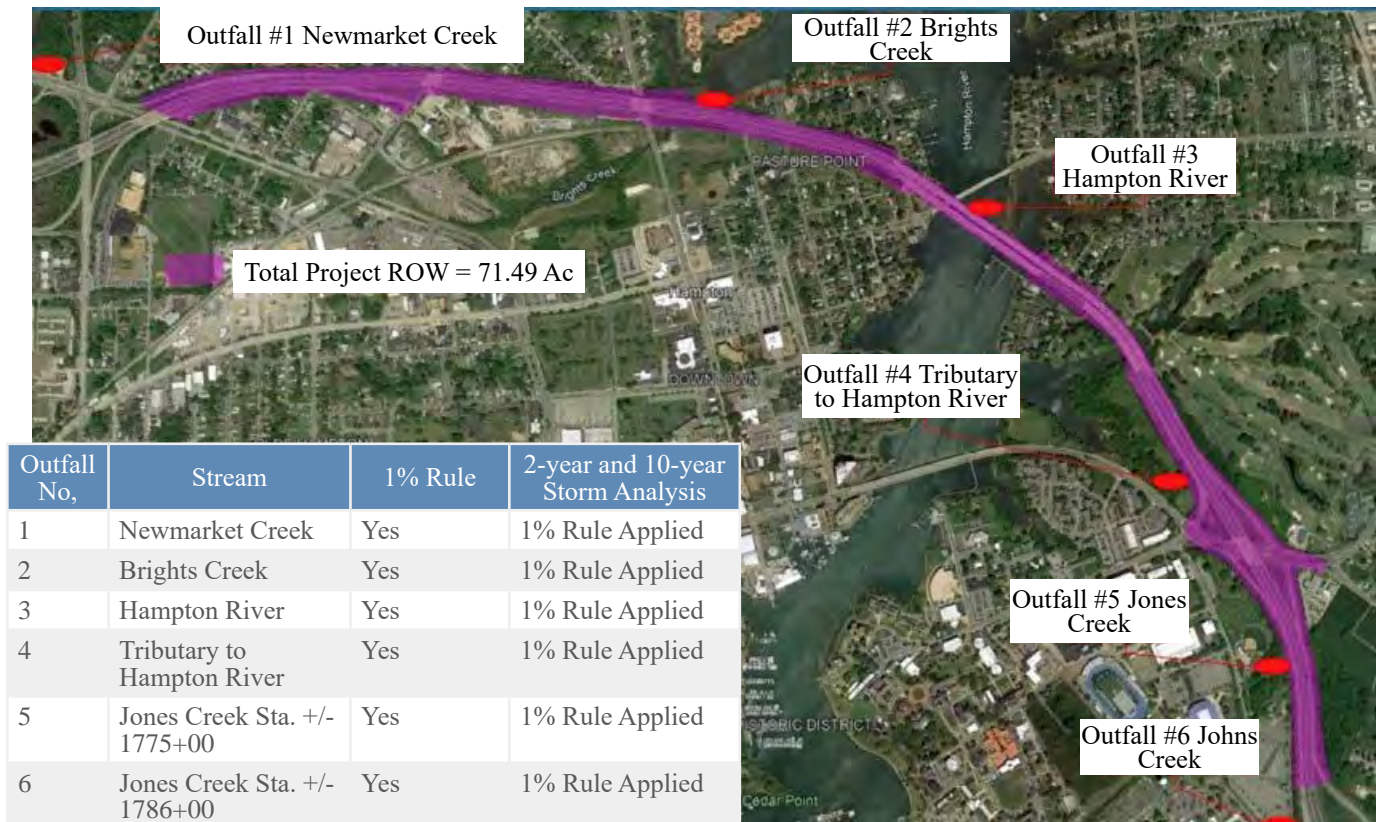


Figure 4.3.1.2.2: Outfall Analysis I-64 HREL Segment 4C

4.3.1.5 ITS Design

The traffic management systems in the project area will include CCTV surveillance, an over height detection system, and continuous count stations (CCS). The field elements will be connected to the traffic operations center via fiber optic cable and powered through individual service drops. The project will maintain the CCTV cameras and over height detection systems through the construction period until the new field elements are installed and operational or, in the case of the over height detector system, the system is no longer needed. A field of view sketch will be prepared for the ultimate locations of the CCTV cameras to ensure complete and overlapping video surveillance coverage on the roadways within the project limits throughout the project area. The over height detector systems will consist of a cabinet and controller, over height detectors, a set of flashers, a static sign, a gong, and two DMS. At locations where a CCTV camera and a traffic signal controller may be co-located, separate fiber optic switches and routers shall be provided for the CCTV camera and the traffic signal controller.

During the RFP phase, the DBT focused on ensuring that the design developed meets the Technical Requirements set forth in the RFP. Final ITS plans will be developed for approval before the installation of ITS devices. Our design is consistent with the RFP Conceptual Plans.

Integration to tolling system and VDOT centralized traffic control systems will be completed; initiating any testing “burn in” period.

The DBT has carefully assessed the existing conditions and ITS facilities within the project limits including multiple site visits and review of the available data. The results and findings have been fed into other disciplines in order to:

1. Minimize impact on the ITS facilities and operations during construction
2. Plan for continuation of the ITS operations during all construction phases
3. Prepare a preliminary plan for testing and hand-over based on previous DB experience with previous projects of similar scope and complexities in Northern Virginia, Hampton Roads and nationwide
4. Ensure adequate lighting during the construction by de-conflicting measures incorporated in the proposed MOT schemes
5. Properly account for material lead times and installations

4.3.2 Conceptual Structural Plans and Description

Volumes I and II include specific details related to our additional enhancements to our design concept, project approach and construction. Several of these design enhancements are summarized in Table 4.3.2.

4.3.2.1 Conceptual Bridge Plans

Provided below is an overall description of the structural characteristics and proposed design concept for the bridge structures and walls included in this project, including: span configurations, transverse section description, geometric characteristics, and significant elements of the superstructure and substructure.

4.3.2.2 Conceptual Bridge Design and Enhancements

4.3.2.2.1 B-673 I-64 EBL over Hampton River

The Conceptual Structural Plans for the new Eastbound Lanes (EBL) bridges are included in Volume II. The description and structural concept of the bridge structure, retaining walls, horizontal and vertical clearances, and the number and widths of the lanes are narrated here.

Span Configuration: The bridge consists of four segments:

Bridge EBL-A: The first segment that crosses over the River Street has two spans of steel girders, 136’-6” each.

Bridge EBL-B: The second segment is around 1200 feet consisting of precast concrete girders. This segment has 13 spans, including the one crossing over Pembroke Avenue.

Plugged Fill Area: The third segment is over ground and the roadway is supported by 400 feet of MSE retaining wall on both the sides of the EBL structure.

Bridge EBL-C: The last segment is 750 feet long and again consists of precast concrete girders. There are 7 spans of the bridge including one that spans over S. Boxwood Street.

Transverse Section

The new EBL bridge provides: a 2ft minimum width inside shoulder, four 12’-0” lanes with a 3ft buffer between the HOT lanes and GP lanes, and a 10’-0” minimum width outside shoulder.

Geometry

- The enhanced horizontal geometry of the I-64 EB lanes construction provides the required minimum of 12’ horizontal clearance with the WBL between River Street and the eastern bank of the Hampton River.
- The new horizontal geometry of the EBL provides 63’-0” face to face between curbs.
- The locations of the proposed substructure units provide the required horizontal clearances for the under passing streets, and the waterbody.
- The vertical profile set for the I-64 EBL construction baseline provides final top of deck elevations for the new structures based on optimization of the EBL profile to accommodate the proposed bridges and the embanked roadway area between the Hampton Road branches.
- The proposed vertical profiles have been optimized to facilitate adequate drainage and cleaning of the superstructure and locates the

Table 4.3.2 Conceptual Structural Plans and Description Enhancements

Benefits & Enhancements	Safety For The Traveling Public, Construction Operations And The Environment						
	Operations And Coordination With Adjacent Projects						
	Schedule						
	Constructability With Focus On Constrained Work Zones In An Urban And Marine Environment						
	Outreach, Stakeholders and Public Acceptance						
	Future Inspection, Maintenance and Asset Performance						
	Cost						
B-673 I-64 EBL Bridge	Our proposed design includes span re-configuration that economizes the member sizes for erection and constructability as well as de-conflicting with the existing piers/piles minimizing pile extraction and unforeseen conditions during construction.	✓	✓	✓	✓	✓	✓
	Our proposed design will be constructed in one (1) phase, eliminating longitudinal construction joint(s).	✓	✓		✓	✓	✓
	Our proposed design eliminates total of nine (9) piers including one (1) in the water and the associated bearings compared to the RFP design. Our design requires no VA piers over water. This results in a significant reduction in future inspection and maintenance.	✓	✓	✓	✓	✓	✓
	Our proposed design includes three (3) discrete bridges and a raised embankment between Hampton River Branches. Compared to the RFP design, the proposed configuration reduces over 27,000 square feet of bridge deck area and the associated future maintenance efforts and costs.	✓	✓	✓	✓	✓	
	The proposed super- and substructure will be designed and detailed to permit future jacking for bearing replacements.		✓		✓	✓	✓
B-674 I-64 WB Bridge	Our proposed design eliminates five (5) joints at piers and replaces the abutment joints with VDOT standard deck over extension . During the RFP phase, we have identified additional joints that may be eliminated. This will be coordinated with VDOT after the award of the contract.		✓		✓	✓	✓
	Our proposed design utilizes one (1) line of PCBT girders in units 1, 3, 4, and 10, reducing the number of bearings and the future maintenance and costs.	✓	✓		✓	✓	
	Our proposed design minimizes the extent of installation of diaphragms between the existing and adjacent new girders by accounting for the girders lateral rigidity and relative close spacing to the existing girders.	✓	✓		✓	✓	
	East abutment extension in the vicinity of the Golf course has been carefully designed and detailed to minimize the Right-of-Way and environmental impacts.	✓	✓	✓	✓	✓	
	We have advanced the load rating (complete BrR models) for the entire bridge to account for interim MOT and final built conditions. This early design work ensures that our proposed design will not comprise the load rating of the existing exterior girders that will act as interior girders in the final condition.	✓	✓		✓	✓	
	Approved ATC No. 1 for Pier 9 provides a safe, low maintenance solutions that has gone thru extensive geotechnical and constructability reviews during the RFP.	✓	✓	✓	✓	✓	✓
	Design solution for Bent 37 extension includes a unique three (3)-pile supported bent that accounts longitudinal and lateral stability				✓		
Bearings	We have advanced the design and detailing of the bearings to account for constructability and schedule compression.	✓	✓		✓	✓	✓
All Bridges	Our design includes the use of Corrosion Resistant Reinforcing Steel Class III in the deck slab, parapets, abutment backwalls, and MSE walls splashing zones.		✓				
	Our design include the use of low-permeability/low shrinkage concrete.		✓			✓	
B-672 I-64 EBL/WBL over King St.	Our proposed widening includes a unique design that accounts for the potential conflict between the existing and new WBL Bridge Pier 2 including: 1) stability of the existing asymmetric pier/foundation system, 2) coring thru the existing pile cap on the north side of the bridge to allow for new driven piles, and 3) minimizing the final load shedding between the existing and new pier/foundation elements.	✓	✓	✓	✓	✓	✓
B-676 I-64 EBL/WBL	Our proposed widening over Settlers Landing Road utilizes micropiles in order to minimize vibration during the pile installations.	✓	✓	✓	✓	✓	✓
Joint Eliminations	The elimination of deck joints using flexible link slab in the piers/bents and deck extension at abutments help mitigate the intrusion of aggressive ions such as chlorides at the beam ends resulting in increasing the service life of the bridge.	✓	✓		✓	✓	
Bridge Widening	Our proposed bridge widenings will utilize the existing wingwalls in order to minimize the support-of-excavation and impact on the mainline I-64.	✓	✓	✓	✓	✓	✓
Walls	Our design maximizes the use of gravity walls minimizing the excavation footprints, special backfills and impact on mainline I-64.	✓	✓	✓	✓	✓	✓

- low point of the vertical curve off the bridge.
- The vertical profiles meet the clearance requirements from bottom of superstructure low chord to maximum expected high water elevation.
- The proposed design meets the minimum horizontal clearance of 53 ft between Bents 11 & 12, as required by the USCG.

Superstructure

- As previously mentioned, the proposed bridges have different superstructure girders as listed below:
 - Bridge EBL-A: Painted ASTM A709W W27 steel girders; Grade 50W (fy =50 ksi)
 - Bridge EBL-B: Precast Prestressed Concrete PCBT Girders with 270-ksi 0.6" diameter low relaxation strands
 - Bridge EBL-C: Precast Prestressed Concrete PCBT Girders with 270-ksi 0.6" diameter low relaxation strands
- VDOT Mix low permeability, low shrinkage concrete will be used in the deck slab, parapets, terminal walls and integral abutment backwalls.
- Corrosion resistant reinforcing steel, class III (stainless steel) will be used in the deck slab, parapets, terminal walls and integral abutment backwalls.
- Bearings will be laminated elastomeric pads with stainless steel sliding plates when necessary to accommodate thermal movements.
- The bridge will have a jointless superstructure. Our design is very efficient and eliminates the use of Virginia Piers over the water, reducing future maintenance and associated cost.
- A deck slab drainage system will be provided using galvanized grate drainage inlets and galvanized steel pipe downspouts designed to meet allowable spread requirements.
- A 42" high concrete parapet (F-shape) will be provided on both sides of the bridge.

Substructure

- The DBT has developed a comprehensive and iterative constructability review for this project and this specific bridge given the schedule constraints of this contract. As such, we have developed a span reconfiguration to:
 - Stay clear of the existing foundations/timber piles
 - Minimize impacts within the River Park
 - Optimize the bridge profile and pile length and driving operations
- Virginia abutment and pier details incorporate VDOT's jointless criteria.
- The substructure pier units (pile bent configuration) are comprised of multi-column bents and 24-in square precast prestressed concrete driven piles and Reinforced Concrete (RC) cap beams.

- The exterior piles are battered to provide global lateral stability
- Some of the bents include A-Frame battered pile configurations to provide global longitudinal stability

Enhancements

The DBT's Design Concept meets or exceeds the Project's intended scope of work and will benefit end users, particularly in terms of safety, operations, schedule, construction, and public acceptance. Key features include:

- Public Acceptance:** The proposed design has accounted for the viewshed harmonization and other aesthetic elements of the entire I-64 EB Bridge Piers over Hampton River.
- Operations, Schedule and Construction:** The DBT will self-perform the construction of unique foundation elements if foundation conditions vary from conditions depicted in the existing plans and Geotechnical Data Report prepared by the Department. The ability to self-perform this work allows us to control the risk associated with encountering any unexpected conditions. Construction access from the east side reduces environmental impacts on the west side of the Hampton River.
- Safety:** The DBT will create access to the Hampton River bridge for construction separate from the I-64 main roadway thereby reducing impacts to the traveling public and improving safety during construction.
- The DBT has considered the types of materials, methods, and functionality of a number of details and has incorporated them into the Design Concept to reduce the need for future inspection, maintenance, and associated cost and to provide
- VDOT full confidence in the project's long-term asset performance and durability.

4.3.2.2.2 B-674 I-64 WBL over Hampton River

Span Configuration

- The proposed design consists of 38 spans matching the existing geometry and 10 continuous deck units of 228', 300', 84', 268', 300', 300', 300', 300', 180', and 220' for a total length of 2,780'.
- The piers/bents for the widening of this bridge are located to match the existing piers/bents of the existing bridge, except for Bent 9 which is skewed differently (per approved ATC No.1) due to the site space limitation imposed by Pembroke Ave. that exists underneath the widening portion.

Transverse Section

- The proposed bridge transverse section provides 12' widening providing an additional 10'-min. shoulder on the North side of the bridge.
- In Units 1, 3, 4, and 10, a new single line of prestressed PCBT-45 supports the bridge widening. This new girder is connected to the adjacent existing girder using VDOT

intermediate steel channel section diaphragms, as well as VDOT concrete closure end diaphragms.

- In Units 2, 5-9, two new lines of prestressed PCB-3 support the bridge widening. While the two new girders are connected to one another using VDOT intermediate steel channel section diaphragms, no diaphragm connection is made to the adjacent existing girder.
- In Unit 10, two new lines of continuous steel plate girders support the bridge widening. The two new steel girders are connected to one another using VDOT intermediate and end cross frame diaphragms. Also the same diaphragms are used to connect the new girder with the adjacent existing girder.

Superstructure

- The bridge widening includes a new F-shape BPB-4 (42" concrete parapet) and new sound walls of varied height along the North side.
- In Units 1-9, prestressed concrete girders (single line of PCB-45 in Units 1, 3, 4, and 10, and two lines of PCB-3 in Units 2, 5-9) with $f'c$ of 10 ksi and $f'ci = 8$ ksi is used.
- In continuous spans of ak and al, new structural steel plate girders with Grade 50 ($f_y = 50$ ksi) are used.
- The 10 continuous deck units in both existing and widening portions of the viaduct are made by eliminating the existing deck joints at Piers 1-3, Pier 34, and Bent 35 using VDOT Flexible Link Slab detail, as well as by replacing the existing deck joints at Abutments A and B using VDOT Deck Extension detail.
- At all other pier/bent locations, the new widening structure follows the existing continuity in the deck for live loads.
- All remaining deck joints in the existing viaduct are to be replaced by VDOT Elastomeric Expansion. Dam detail, and the deck joints in the widening portion at those locations are designed using the same joint detail.

Substructure

- Piers 1, 2, and, 36 consist of a pier cap, two columns, a footing, and four concrete piles.
- Piers 8 and 9 have unique two-pile bent configuration with monolithic extension of the existing cap beam.
- Bent 37 has a unique three-pile bent solution with eccentric cap beam.
- At all other locations, the substructure consists of a bent cap and four concrete piles.

Enhancements

- One girder line is eliminated in Units 1, 3, 4, and 10 (i.e., in 40% of continuous units). This reduces material and cost without sacrificing performance.
- By placing the new interior girder as close as possible to the adjacent existing girder, the diaphragms between the new and adjacent existing girders are eliminated in Units 2, 5-9

(i.e., in 60% of continuous units). This prevents the need for drilling into the existing prestressed concrete girders to install diaphragms.

- Using our proposed transverse sections, a comprehensive LRFR load rating analysis has been conducted for all spans covering all new and existing girders using AASHTO Ware BrR. All rating factors for HL-93+IM (Inv. And Opr.) are evaluated in detail to ensure that the proposed transverse sections and girder layouts do not jeopardize the rating factors in the existing girders, especially the existing fascia girders.
- We have already developed BrR models for all spans accounting for all applicable existing and new loads. This effort was imperative for analyzing the existing bearing replacements for the new continuity conditions.
- The elimination of deck joints using flexible link slab in the piers/bents and deck extension at abutments help mitigate the intrusion of aggressive ions such as chlorides at the beam ends resulting in increasing the service life of the bridge.
- East Abutment extension in the vicinity of the golf course has been carefully designed and detailed to minimize the Right-of-Way and environmental impacts.
- Abutment widenings will engage the existing wing walls during the construction to minimize support-of-excavation and impact on of the I-64 mainline

Piers 8 and 9 Extensions are based on a unique design specifically developed due to the site-specific constraints of Pier 9 pertinent to the conflict with the adjacent Pembroke Avenue Bridge superstructure and Pier 3 and as approved through ATC submittal 001. The proposed design includes the new substructure and deep foundation to support the widening of I-64 WB Bridges superstructure. The new substructure/foundation unit will behave as an extension of the existing Pier 9 in the vicinity of Pembroke Avenue Bridge. The proposed ATC includes the following bridge elements: Two (2) 24-in. square precast concrete piles driven vertically to the target tip elevation per the bridge and geotechnical analysis and recommendation, and monolithic extension of I-64 WB Hampton River Bridge Pier 9 existing cap beam to support bridge widening including deck slab and girders. The DBT has assessed the spacing between the proposed precast concrete piles and the existing piles in the immediate vicinity. The proposed pile layout is based on a minimum of three (3) times the pile diameter and is in compliance with the applicable VDOT requirements. Approved ATC No. 1 also accounts for the battered profile of the existing exterior pile at Pembroke Ave Bridge Pier 3 and the shifting of the influence zone of the referenced battered pile from the proposed axial piles. The DBT has preliminarily assessed the lateral loads and does not anticipate significant increase in magnitude due to the WB widening. As such, the approved ATC No. 1

will not impact the lateral pile group capacity of I-64 WB Hampton River Bridge Pier 9 at the final built-condition.

Due to the geometric layout of the WBL Bridge and the Pembroke Ave Bridge (underpass), we are proposing a kink in the Pier 9 cap beam in order not to impact the clearance over the underpass and separate the construction from the traveling public.

In reference to S&B Manual File No. 15.02-1 and as approved by ATC No. 1, a minimum clearance of 2'-10" will be provided within the zone of intrusion defined as the horizontal distance between the face of the existing railing on Pembroke Avenue Bridge and the new precast piles. The DBT acknowledges that a design waiver will be required due to the variance from the referenced S&B Manual File No. 15.02-1 Zone of Intrusion minimum clearance requirement of 4 ft.

The existing Bent 37 includes an integral steel cap (fracture critical) supported on two existing columns with multi-directional battered piles (approximately 40ft below the footing with 1.5 in. per foot batter angle per the as-built drawings). The DBT has developed a unique solution (Figure 4.3.2.2.2. below and Volume II Page 71) that: 1) de-conflicts with the existing piles, 2) includes three (3) vertical 24-in.square precast prestressed piles spaced at 3x diameter with excess capacity, 3) at least 20-ft elevation separation between the tip elevation of the existing and new piles, 4) minimizes impact on the influence zones of the adjacent piles due to tip-elevation separations and battered-vs.-vertical profiles of the piles, 5) forces the cantilevered cap beam to act as Deep Beam (shear element) improving the eccentric effects on the piles due to girder reactions, 6) harmonizes with the north viewshed of the proposed B-674 Bridge widening.

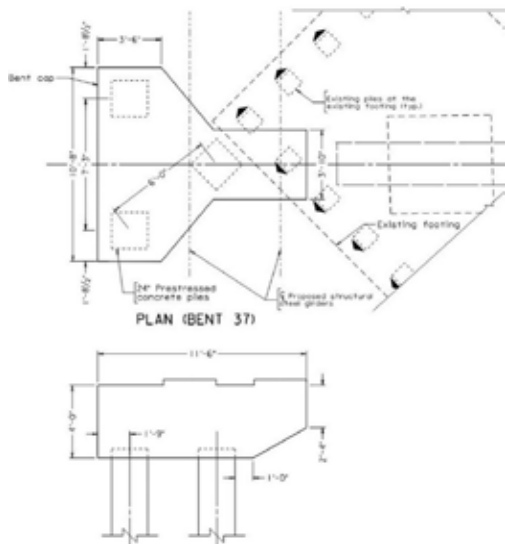


Figure 4.3.2.2.2: Unique solution too widening of B-674 Bent 37

4.3.2.2.3 B-672 I-64 EBL/WBL over King St. Span Configuration

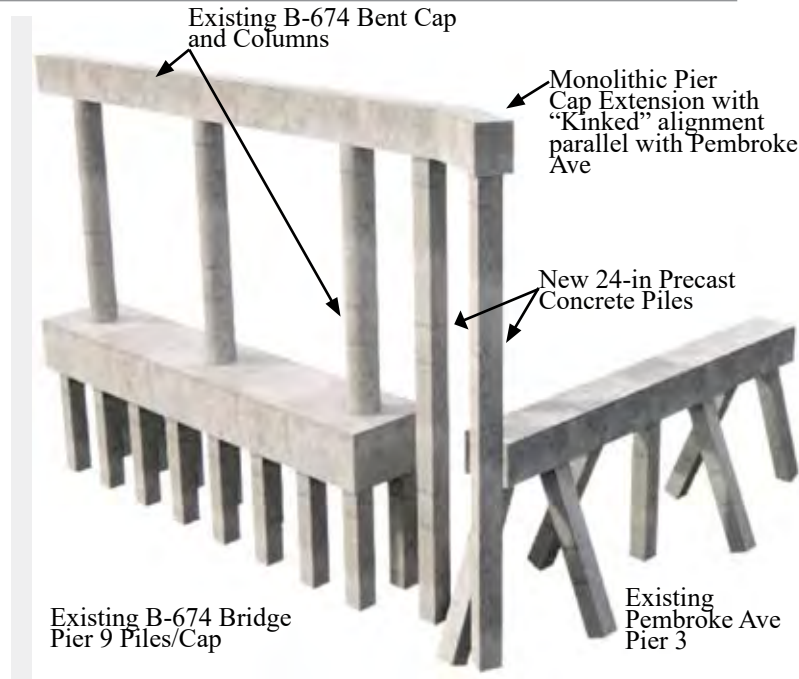


Figure 4.3.2.2.1: ATC 001 showing the rivet model for B-674 I-64 WBL over Hampton River Pier 9 Extension

Enhancement ATC 001 - B-674 I-64 WBL over Hampton River Pier 9 Extension

The monolithic extension of the cap beam is intended to enhance the structural (longitudinal and lateral) stability without load sharing between the new and existing pier elements. The DBT has preliminarily developed a sequence of construction that minimizes the load sharing between the existing and new Pier 9 units. The proposed sequence of construction allows for the deck slab and new pier cap weights (except the closure pours) as well as the new girders to be primarily supported by the new P9.1 and P9.2 piles. As such, the vertical load sharing between the existing and new Pier 9 units will be primarily limited to the composite loads including deck slab closure pour, safety barriers, sound barrier walls, etc. and the live loads.

- The proposed bridge widening conforms to the existing geometry, span configurations and skew angles.
- B-672 I-64 EBL and WBL Bridges meets the required vertical clearances over King St.

Transverse Section

- EBL I-64 Bridge: Two 12ft general purpose lanes; two 12ft HOT lanes, a 10ft minimum width outside shoulder, a 2ft minimum width inside shoulder, and a 3ft wide buffer space

- between the general purpose and HOT lanes
- WBL I-64 Bridge: Two 12ft general purpose lanes, two 12ft HOT lanes, a 10ft minimum width outside shoulder, and a 14ft minimum width inside shoulder

Superstructure

- PCBT-54 Precast Concrete Girder prestressed using 0.6" diameter 270 ksi low relaxation strands.
- Corrosion resistant reinforcing steel, class III (stainless steel) will be used in the deck slab, parapets, terminal walls, and integral abutment backwalls.
- Low permeability, low shrinkage concrete will be used in the deck slab, parapets, terminal walls, and integral abutment backwall.
- Laminated elastomeric pads with stainless steel sliding plates when necessary to accommodate thermal movements.
- Jointless superstructure using VDOT's Virginia Deck-over extension details at the existing and new abutment extensions.
- Jointless superstructure/continuous for live load using VDOT's Virginia Link Slabs details over the existing and new piers.
- Latex Modified Concrete overlay will be applied at the deck slabs to extend the hydromilled surface up to the original grade
- A 42" high concrete parapet (F-shape) will be provided on both sides of the bridge.

Substructure

- The existing abutments will be reconfigured to allow for the proposed deck-over extension
- The proposed abutment extensions will be designed and detailed to allow for the proposed deck-over extension
- EBL Bridge Piers 1 & 2 and WBL Bridge Pier 2 widening is supported by new isolated piers comprised of a cap beam, single RC circular column, pile cap and multiple 14-in square precast prestressed concrete driven piles

Enhancements

- Abutment extension will engage the existing wing walls during the construction to minimize support-of-excavation and impact on I-64
- To address the potential conflict between the existing and new WBL Bridge Pier 2 units, a unique substructure system (Volume II page 71) has been developed that includes: 1) partial removal of the existing pile cap/footing; 2) stabilizing the existing pier given the eccentric nature of the existing substructure system; 3) salvaging and repairing (as needed) the existing exposed piles; 4) driving new precast prestressed concrete piles; 4) extending the footprint of the existing pile cap/footing to accommodate the widening, and 5) constructing a new column and cap beam. This unique solution has been carefully developed to minimize load sharing between the new and existing piles per RFP

requirements.

4.3.2.2.4 B-676 I-64 EBL/WBL over Settlers Landing Rd.

Provided below includes the structural concept for the widening of Bridge B-676 I-64 WBL over Settlers Landing Rd. The proposed key structural design features and improvements are highlighted as follows:

Span Configuration

- The proposed bridge widening conforms to the existing geometry, span configurations and skew angles.
- B-676 I-64 WBL Bridge meets the required vertical clearance over Settlers Landing Rd.

Transverse Section

- WBL I-64 Bridge: two 12' general purpose lanes, two 12' HOT lanes, a 10' minimum width outside shoulder, and a 2' minimum width inside shoulder
- EBL I-64 Bridge: Not widened but will be reconfigured to include two 11' HOT lanes, two 12' general purpose lanes, and a 3' buffer space between the general purpose and HOT lanes

Superstructure

- Painted ASTM A709W W27 steel girders; Grade 50 (fy =50 ksi)
- Corrosion resistant reinforcing steel, class III (stainless steel) will be used in the deck slab, parapets, terminal walls, and integral abutment backwalls
- Low permeability, low shrinkage concrete will be used in the deck slab, parapets, terminal walls, and integral abutment backwall
- Laminated elastomeric pads with stainless steel sliding plates when necessary to accommodate thermal movements
- Jointless superstructure using VDOT's Virginia Deck-over extension details at the existing and new abutment extensions
- Jointless superstructure/continuous for live load using VDOT's Virginia Link Slabs details over the existing and new piers
- Latex Modified Concrete overlay will be applied on the deck slabs to extend the hydromilled surface up to the original grade
- A 42" high concrete parapet (F-shape) will be provided on both sides of the bridge

Substructure

- The existing abutments will be reconfigured to allow for the proposed deck-over extension
- The proposed abutment extensions will be designed and detailed to allow for the proposed deck-over extension

Enhancements

- Abutment extension will engage the existing wing walls during the construction to minimize support-of-excavation and impact on of the I-64 mainline
- Bridge Piers 1, 2 and 3 widenings are supported

by new isolated piers comprised of cap beam, single RC circular column, pile cap and multiple 12"-diameter micropiles. Micropiles were chosen to minimize vibrations and construction work area and address challenging subsurface conditions such as running sand and high water table.

4.3.2.3 Retaining Wall

The project demands retaining walls at various locations both on EB and WB directions. Traffic barriers on top of walls will be provided at locations where guard rails are not recommended. Depending on the height of the grade difference, as well as feasibility, the team recommends using either MSE walls with moment slabs accommodating traffic barriers or modified gravity walls VDOT Standard RW-3 with dowelled reinforcement from traffic barriers on top. All of the retaining walls will be designed for local and global stability. Foundations will be taken down to the frost depth and appropriate backfill materials will be used. Settlement magnitudes against time will be evaluated during design and measured during construction as part of the quality control process.

4.3.2.4 Soundwall

Soundwalls/noise barriers shall be designed to meet the requirements of the RFP in compliance with VDOT's noise barrier specifications and will be finalized during the Final Noise Analysis process. In this proposal the soundwalls are considered based on the preliminary noise analysis report provided with the RFP. As required by the RFP, a final noise analysis will be performed by our team to confirm the findings of the preliminary analysis or otherwise. We will perform the noise analysis early in the design schedule such that the soundwalls can be installed within the first two project phases. Installation of soundwalls will mitigate the increase in noise over the years. Both ground mounted sound walls (GMSW) as well as structure mounted soundwalls (SMSW) will be installed as shown in the Conceptual Roadway plans. An aesthetically pleasing and appropriate finish, as approved by VDOT, will be applied on the soundwall face that faces the roadway. Precast concrete panels and post will be installed for the GMSW whereas light material panels will be installed for structure mounted ones. The DBT has advanced the design of the concrete post based on the wind load requirements dictated by the proximity to the coastal zone and in close coordination with selected fabricator.

4.3.2.5 Guardrail/Barrier

The proposed locations of guardrail and traffic barriers are shown on the Conceptual Roadway Plans. New guardrail and traffic barriers used on this project will be MASH-compliant for enhanced safety to include the updated grading requirements (2' extended paved shoulder to face of rail and 4' graded area behind face of rail) for guardrail installations.

Full depth pavement will be extended to the face of the new guardrail or new barrier installed as part of the project. MC-4 standard for paving under guardrail will also be utilized for all new guardrails. During final design of the project, the DBT will continue to look for opportunities to refine the geometry to minimize the use of traffic barriers and guardrail on the project to reduce long-term maintenance costs and improve traveler's safety.

4.3.2.6 ITS Structures

Sign / DMS Structures: Spans, Cantilevers and Overhead Gantries | The structures provided for this project will consist of standard cantilever and overhead VDOT box truss structures and foundations, as specified in the 2016 VDOT Road and Bridge Standards Section 1300 for Traffic Control Devices. These structures will be designed to conform to the requirements of the of the AASHTO Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. (6th Edition, 2013 with 2015 interims).

The half-span overhead structures will span across all travel lanes and shoulders of a single direction of travel. The full-span overhead structures will span across all travel lanes and shoulders of both directions of travel. Sign structures for walk-in Dynamic Message Sign (DMS) structures will include catwalks with toe stops, handrails, harness clip-ons, and other safety design features to provide OSHA-compliant access to the entry of the walk-in sign cabinet from the edge of pavement.

Ground-Mounted Sign Structures | Ground-mounted sign structures will be constructed in accordance with 2016 VDOT Road and Bridge Standard Section 1300's SSP-VI A or SSP-VA structures, as applicable.

ITS Poles | There will be three pole types designed, furnished, and installed for this project, each made of a round, tapered galvanized steel section. One will be a 30' pole for MVDs. CCTVs will be mounted on 60' pole with lowering system. One CCTV at the east end of the Hampton River Bridge will be mounted on an 80' pole with lowering system. The pole and the lowering devices will be two interdependent units of a single unit and function together such that the pole and the lowering device are fully compatible and interoperable.

Structure Design and Approval | A field investigation will be conducted at each site to document or verify roadway elevations, existing utilities, existing guardrails, lanes and shoulder widths, and any other relevant information required for structures design. The DBT will design, furnish and install poles and overhead structures with foundations in accordance with the RFP Conceptual Plans.

Upon completion of preliminary geotechnical borings and reports, ITS structure designs will be developed and submitted for approval. In areas of development, where ground will be disturbed or improved via planned widenings, the Geotech

borings and foundation designs will be phased based upon completion of the final grading in these areas. Structures include Overhead Cantilever and Span structures for the static guide signs, DMSs, 60' & 80' Camera Poles with lowering device, and standalone vehicle MVD poles. Upon approval, structures will be released for fabrication and foundation design.

Test bores will be taken at each foundation location to facilitate individual design for each structure.

Approved foundations are installed in coordination with associated WBS and activities including MOT plans, tolling infrastructure installation, and roadway widening activities including installation of paved shoulders and sound barrier wall replacement, and guardrails where needed.

Structure installation is driven by foundation installation and receipt of material. Installation of cantilever and overhead structures is coordinated with MOT plans and conducted under appropriate conditions set forth in the Work Area Protection Manual.

Interim facilities for continued ITS operation on existing structures, modification to existing signs and structures, or temporary signs and structures will be included in the construction phasing as necessary.

Existing supporting infrastructure shall be identified for utilization, along with new or temporary supporting infrastructure, to provide continued ITS throughout each phase of new construction.

4.3.2.7 Integrated 3D Modeling with Dynamic Capabilities

Throughout the preparation of the RFP design the design team utilized VDOT's OpenRoads Designer (ORD) Connect Edition. The 3D design model was developed using the guidance contained within VDOT's 3D Model Development Manual, dated October 2020. Moving forward and throughout the Project Development Process (PDP) the team will continue to use the 3D Model Development Manual and adhere to the standards and recommendations contained within the manual. The team also intends to utilize VDOT SUDA (Subsurface Utility and and Drainage) modules throughout the design process. Utilizing the SUDA modules will allow the drainage and utility designs to interact actively and dynamically with the OpenRoads roadway models. The bridges will be modeled utilizing the most current version of OpenBridge Designer. With the Roadway, utility systems, drainage systems, and the project structures contained within a fully dynamic environment the design team will be able to quickly analyze alternatives and identify potential conflicts between the elements of the project and existing conditions. The utilization of 3D design tools throughout the project will also increase plan quality, reduce NDCs, RFIs and FDCs increase efficiency and provide a tool for engaging the public throughout the design process. The use of 3D design models aids during the design and construction process has

proven to provide cost savings to past projects.

In addition, the DBT has utilized principles of Rivet Modeling for some bridge elements visualization and geometric controls such as B-674 I-64 WBL over Hampton River Pier 9 Extension as previously discussed. Besides, the DBT has extensive experience with the use of such integrated technologies for internal and external communications, coordination, exhibits and virtual tours during stakeholders meetings and public outreach.

During the RFP phase, the DBT utilized Open Bridge Designer to model the proposed B-673 I-64 EBL over Hampton River. This model was connected with Open Roads model provided by the Roadway team creating an interdisciplinary integrated model. The top of the deck was constrained to the Highway Alignment and Profile, meaning that any roadway changes will automatically update the bridge model, saving time on ripple effect changes. In addition, this 3D model is used to fill the gaps in the Highway Corridors. The roadway team provided the I-64 corridor until the start of the bridge and the bridge team provided the bridge models to fill these gaps and create a continuous real-life model. The deck is modeled using two main parameters, the baseline and the superelevation. This allowed us to create 3D deck with real world coordinates and elevations. The software would then generate deck elevations for all the required locations. Anytime there are any changes in the model, the deck report can be regenerated with a click of a button. In addition, after modeling the beams and piers, elevation reports can be generated for these elements as well. This software allowed us to generate these necessary reports without having the need to create multiple external files and spreadsheets. Figures 4.3.2.7.1 through 4.3.2.7.4 are all examples of 3D modeling utilized during the RFP phase.

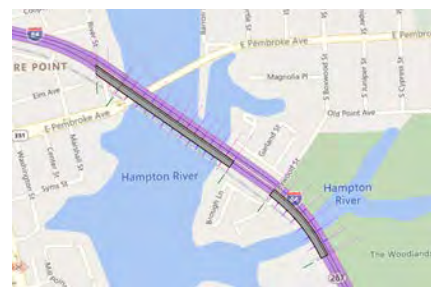
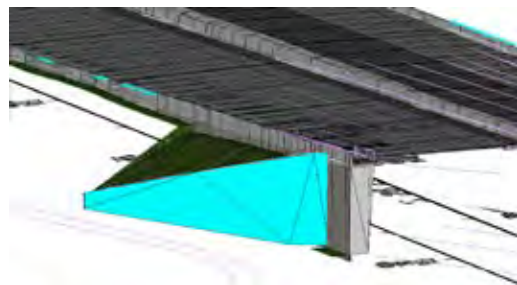
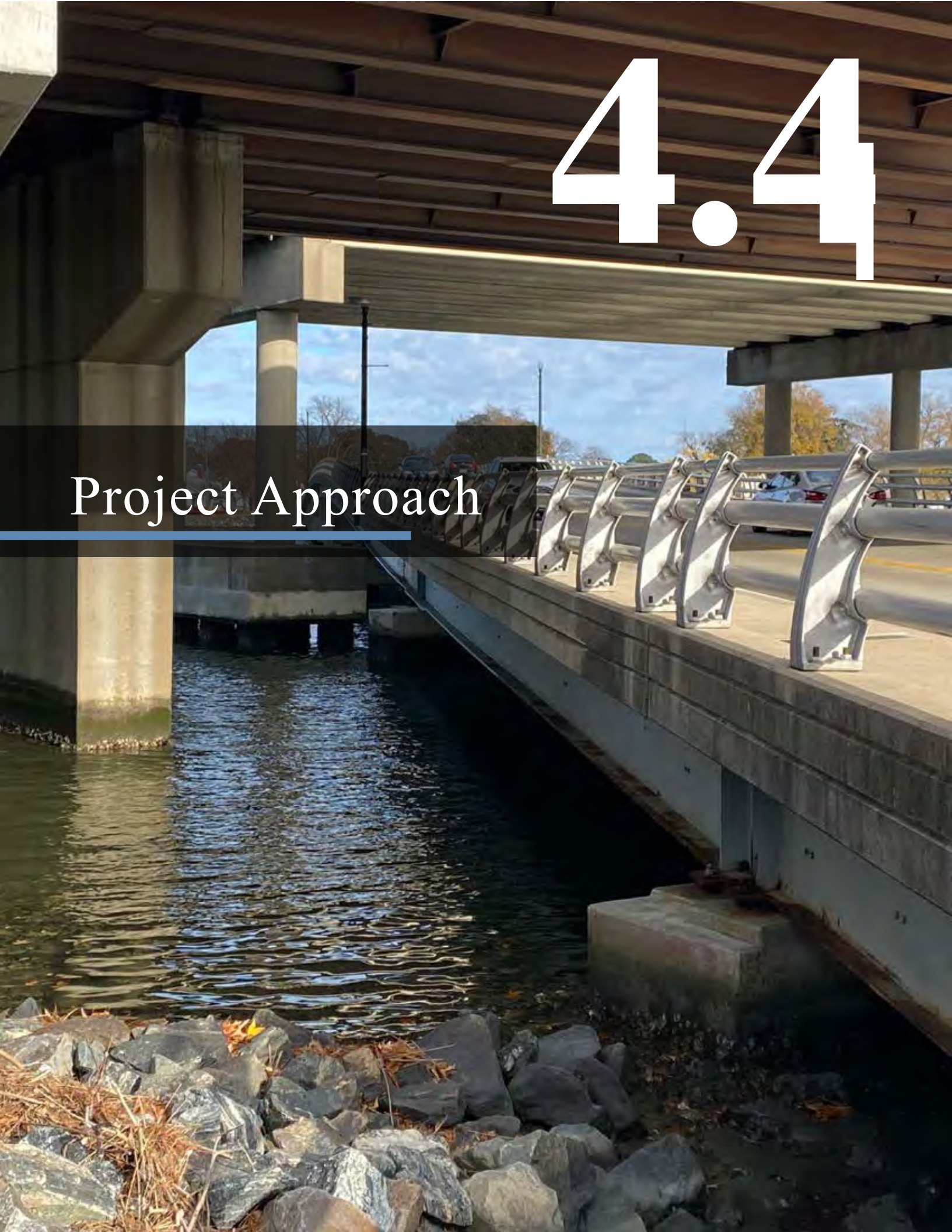


Figure 4.3.2.7.1: 3D Model of B-674 I-64 WBL over Hampton River east abutment widening in the vicinity of the Golf Course showing the grading, retaining walls and approaches, model in real world coordinates and integrated in map environments such as Google map.

4.4

Project Approach



4.4 Project Approach

Our design and construction approach is based on reducing and mitigating any risks to the traveling public and stakeholders.

We developed a risk register to address risks and challenges early, to avoid or mitigate those. The risk register will be updated, monitored and reviewed regularly with VDOT throughout the duration of the project. We have already performed preliminary constructability, environmental, and safety reviews on the designs developed so far for optimization, constructability and reduced impacts to the public. With our wealth of design-build experiences and innovative approach we will deliver a quality project on-time and within budget. We have summarized the enhancements and benefits the DBT brings to VDOT in table 4.4 on the following page and in blue font.

4.4.1 Environmental Management

The DBT has worked on multiple design-build projects across Virginia and has a thorough understanding of the importance of a fully integrated environmental process to manage the Project throughout its lifespan. The DBT has developed a thorough and integrated approach to environmental management and permitting focusing on identifying and understanding the environmental challenges and constraints of the Project. The DBT will develop solutions to mitigate and avoid these constraints preventing Project delays. This approach was successfully utilized on the I-95 SB RRC and I-95 NB RRC Projects enabling the DBT to secure the environmental permits in an efficient and expeditious manner.

Approach to Environmental Management and Permitting

The DBT has developed an integrated and thorough approach to environmental management and permitting. This approach minimizes and avoids impacts to sensitive environmental resources, meets NEPA commitments, and will secure all required environmental permits expeditiously to avoid any project delays. This will enable the DBT to deliver the Project on a compressed schedule.

Our schedule integrates all environmental activities and key milestones including strategies to ensure that the environmental permits are secured ahead of schedule and environmental constraints do not delay the Project. Our approach is founded on the strategies described below that minimize environmental risks and takes full advantage of our Team’s in-depth knowledge from other projects in the area. These strategies are identified below:

- Preparation of a comprehensive Environmental Management Plan (EMP).
- Minimize Environmental Impacts
- Environmental permitting is one of the most important elements and is on the critical path for the project. The DBT will employ strategies with

the regulatory agencies to accelerate the process. The DBT will coordinate with the USACE, USCG, DEQ, VMRC, and other agencies in advance and will hold pre-application meetings. The DBT has in-depth experience of the project area and has successfully obtained individual and nationwide/programmatic permits from various agencies in the area.

- Integrating environmental requirements in the design and integrating environmental staff in all Inter-Disciplinary Reviews.
- Mandatory Environmental trainings and monitoring programs based on the successful training sessions used in various projects, including the I-95 SB RRC project, which were provided to all contractors, VDOT personnel, and sub-consultants working on the project.
- A dedicated environmental team for design and construction.
- Empowering project team members, especially environmental staff, to order stop work if any non-compliance of environmental permits/requirements occur.

The specific environmental management efforts that the DBT will use are summarized below:

Preparation of a comprehensive Environmental Management Plan (EMP):

The DBT will prepare a comprehensive EMP for the project, which will identify the environmental goals, all environmental commitments, environmental permits, the NEPA (CE) document, environmental requirements in the RFP, amendments, and a set of robust procedures to comply, monitor, and report environmental issues. The EMP will be incorporated into the team’s comprehensive Site-Specific Environmental Health and Safety Plan (EHSP) and include updated commitments and conditions in tabular form to: track environmental permit acquisitions, minimize potential project delays, ensure that each environmental permit/approval is accounted for in the Project schedule, and facilitate environmental compliance throughout the life of the project.



Figure 4.4.1.1: Emancipation Oak

Minimize Environmental Impacts: The DBT is committed to avoiding and reducing environmental impacts during design and construction by establishing proven procedures to address environmental issues, provide mitigations, and reduce risk. Throughout the design process, environmental staff will be integrated with the design team to ensure that all design elements are developed while minimizing environmental impacts. Environmental resource mapping will be provided to design staff and sensitive resources will be identified

Table 4.4 Project Approach Enhancements

Benefits & Enhancements	Safety For The Traveling Public, Construction Operations And The Environment						
	Operations And Coordination With Adjacent Projects						
	Schedule						
	Constructability With Focus On Constrained Work Zones In An Urban And Marine Environment						
	Outreach, Stakeholders and Public Acceptance						
	Future Inspection, Maintenance And Asset Performance						
	Cost						
Environmental	ECM, Julia Connors has significant experience in Hampton Roads District on DB projects of similar scope and complexity, holds RLD, ESCC and SWM Inspector certifications and will coordinate the design and implementation of our environmental and ESC plans. She is empowered with Stop Work Authority and will participate in C107 inspections to confirm compliance with the design and sequence of construction. She will also perform over the shoulder reviews of the ESC on the adjacent projects at the 4 overlap and tie-in areas.	✓	✓	✓	✓	✓	✓
	DBT's written Environmental Management Plan identifies and tracks all environmental commitments and conditions. Our CPM accounts for all environmental commitments, TOYR and permit conditions/requirements.		✓	✓	✓	✓	✓
	DBT will develop project specific environmental training for inclusion in our mandatory project orientation. All team members and subcontractors will be required to complete this training as a precursor to being allowed to work on the project site.		✓	✓	✓	✓	✓
	Our SWM concept incorporates the nutrient credits already purchased by VDOT eliminating the need for any traditional SWM Ponds	✓	✓	✓	✓	✓	✓
	DBT will dedicate a Hydro-seeder/mulcher stationed on site to facilitate immediate stabilization maintaining E&S controls at all times.	✓	✓	✓	✓	✓	✓
	Our proposed embanked roadway area along EBL between the Hampton River and S. Boxwood St. reduces 27,000 SF of bridge deck and eliminates excavation and removal of over 500 truck loads of excess soil on the local roadways when compared to the RFP concept.	✓	✓	✓	✓	✓	✓
	The DBT will install exclusion fencing around environmentally sensitive areas to properly separate from construction areas.		✓	✓	✓	✓	✓
Utilities	Our sequence of construction focuses on completing the outside sections of I-64 including the soundwalls in the first 2 phases.	✓	✓	✓	✓	✓	
	The alignment shift of B-673 provides an additional 30' of permanent horizontal clearance between the new bridge and the Dominion Transmission Lines than the RFP concept, improving access and operations for VDOT and Dominion Maintenance crews in the future.	✓	✓	✓	✓	✓	✓
	Our Utility Coordinator, Juan Doron will hold bi-monthly meetings with all utility owners to review the status of P&Es, update our comprehensive utility matrix and schedule, and present the information to VDOT as a part of our monthly utility status report.	✓	✓	✓	✓	✓	✓
	The CPM has been developed with no third party utilities on the critical path.		✓	✓	✓	✓	✓
	The DBT will develop and share 3D Models with the utility owners to ensure compatibility between P&Es and our plans.	✓	✓	✓	✓	✓	✓
Geotechnical	DBT will inspect all utility relocations as they are being performed within the project limits to ensure quality and conformance to the approved P&Es. The as-built locations of relocated utilities will be surveyed using geospatial equipment and digitally recorded as a component of comprehensive utility matrix.	✓	✓	✓	✓	✓	✓
	Micropiles foundations at B-676 will reduce vibrations and footprint needed for equipment while mitigation subsurface challenges related to water table and running sands. The DBT safely performed this same scope on VDOT's Rte 7 over DTR DIAH DB project.	✓		✓	✓	✓	✓
QA/QC	The DBT will develop and implement a comprehensive instrumentation and monitoring plan to verify field performance and design assumptions and ensure vibrations on existing structures shall not exceed 0.5 inch per second.		✓	✓	✓	✓	✓
	The QAM will hold formal meetings at the project office at least weekly to review; look ahead schedules, staffing assignments, preparatory meetings, QA/QC logs, inspection reports and the quantity ledger book.				✓	✓	✓
	DBT will provide the QA/QC and VDOT, at VDOT's request, each a electronic GPS survey rover loaded with the most current AFC design model in order to independently verify construction tolerances in the field in real time.	✓		✓	✓		

such that designs are developed while avoiding or reducing environmental impacts. Our design avoids disturbance outside of the NEPA Study Area and reduces the work proposed outside of the existing ROW identified in the RFP. As our design progresses, we will ensure that the limits of disturbance and ROW do not expand beyond those evaluated in the NEPA (CE) document; thereby avoiding the need for additional NEPA studies and avoiding potential project delays.

Environmental Training During Design and Construction (Enhancement): Before construction begins, our environmental team will develop a project specific environmental training session program concerning sensitive environmental resources and permit compliance requirements. The training will identify the resources that must be avoided and highlight all the permit compliance requirements. The training session will be video recorded and all new project personnel including subcontractors will be required to receive a formal orientation prior to working on the site. A review of the EHSP and the environmental training video. This will ensure all team members are aware of all environmental conditions, environmental resources, and commitments avoiding permit non-compliance. The DBT is well-aware of the Project constraints and issues in the project area and the additional training will reinforce our team’s awareness and the importance of permit compliance.

Approach to Environmental Permitting: The DBT will use the following approach to environmental permitting during design and construction to avoid, minimize, and mitigate impacts to environmental resources and avoid potential project delays during the permitting process.

Early identification of Permits and Agency Coordination: Our team will establish early coordination with permitting agencies including USCG, USACE, DEQ, VMRC and the other consulting/approval agencies (USFWS, NMFS, DHR, DGIF, DCR, VDACS, VIMS) immediately upon NTP. Our team will continue this early coordination to pro-actively establish permit requirements, address avoidance and minimization measures, understand mitigation measures and compensation requirements, establish special status species survey parameters and alternate Time of Year (TOY) measures, and minimize potential delays. Table 4.4.1.2 shows a list of the environmental permits needed for the project.

Table 4.4.1.2: Environmental Permit	
Agency / Permit	Description
USCG RHA Section 9	Permit for the new/modifications to bridge on navigation channel (Hampton River Bridge).
DEQ Virginia Water Protection Permit (VWPP) CWA Section 401/Water Quality Certification (WQC)	WQC for Section 404 and Section 402 permits.
DEQ Virginia Pollutant Discharge Elimination System (VPDES) (CWA Section 402)	Construction General Permit (CGP) for discharges to waterbodies from construction activities and Stormwater Management (SWM) Plan approval needed upon approval of CGP Stormwater Pollution Prevention Plan (SWPPP) (incorporating Erosion & Sediment (E&C) Control, SWM, and Pollution Prevention (P2) Plans).
VMRC	Permit for impacts to State-owned subaqueous bottom for the Hampton River Bridges.

Develop Environmental Database and include Environmental Resources in the Design: Our team will utilize the environmental resources data provided by VDOT and collect additional data as needed from agencies and field investigations to develop a comprehensive environmental database which will be used to develop GIS and DGN layers for designers. Upon NTP, our team will immediately coordinate with the resource agencies to define the field investigation/survey needs. Our team will prepare and submit the necessary resource survey, self-certifications, and habitat analysis as needed by the resource agencies to expedite the Section 7 consultation process which will help expedite permit approvals. Our project schedule included in the proposal includes activities for natural resource inventories to ensure all survey windows are accounted for to avoid project delays.

Incorporate Avoidance, Minimization, Mitigation Measures in design and construction: Our environmental team will be integrated with the design and construction teams to ensure avoidance, minimization and mitigation measures are developed for any environmental impacts and that those measures are implemented. Our team will set up pre-application meetings and inter-agency workshops with key agencies including USACE, USCG, DEQ, and VMRC. These meetings will help develop agency “buy-in” on the avoidance and minimization measures early in the design process and provide the opportunity to propose various methods to expedite the permitting process through the NWP and GP. This will also help identify potential agency concerns early, minimize potential delays, and compress the environmental permitting duration, which is a critical path activity. Our team will utilize our current relationships with the agencies and continue to analyze and implement additional cost-effective

Table 4.4.1.2: Environmental Permit	
Agency / Permit	Description
USACE Clean Water Act (CWA) Section 404	Permit for impacts to Waters of the US and wetlands. (Certain earthwork, in-water bridge pier foundations, trestles, dredging, etc.) NWP 14, 18, 23 (or Individual permit).

avoidance and minimization measures, to minimize the potential for project delays from permitting and other approvals.

Environmental Permit Compliance Monitoring During Construction: The DBT fully understands the importance of complying with the environmental permit requirements. The DBT will assign a dedicated team lead, led by the Environmental Compliance Manager, to monitor environmental compliance during construction. **All DBT personnel will be granted the Stop Work authority for environmental non-compliance.** As an example, this was done during the I-95 SB RRC Project where all work was stopped for an entire day, following a storm event, so the Team could concentrate on inspecting all E&S measures along the project corridor. This enabled the Team to identify and correct deficiencies and potential E&S issues. In addition, self-reporting permit compliance issues to the agencies is also an important component of our Team’s monitoring program. The environmental team will be assigned to avoid and minimize onsite compliance issues. **In accordance with our EMP/EHSP, the Team will use exclusion fencing/flagging and signage around resources/areas of concern to ensure they are not impacted by construction.** This will protect resources such as non-impacted wetlands, the historic Emancipation Tree, the Pembroke Avenue Tidal Wetland Mitigation site, and other sensitive resources in the area. The Team will develop a

VDOT approved Erosion and Sediment Control (ESC) Plan, Stormwater Management Plan (SWM) and Stormwater Pollution Prevention Plan (SWPPP) to conduct the compliance inspections required by VDOT Standards and Specifications and permits.

Approach and Solutions to Environmental Conditions and Areas of Concern

The DBT fully understands that the project is located in close proximity to various important environmental resources. Our team has already identified most of the sensitive resources in the project area and will continue to refine this database in close coordination with the resource agencies in the area. The project area includes six historic resources including the Hampton Institute Historic District which is a National Historic Landmark. This district includes the Emancipation Oak Tree. This Historic District is located near the start of the Hampton River southwest of I-64.

Our team is committed to avoiding and minimizing all impacts to environmental resources. The DBT’s approach to environmental conditions and resources is based upon the four- tiered approach: (1) Avoid (2) Minimize (3) Restore (4) Mitigate.

The DBT has identified the key Environmental Conditions/Areas of Concern within the Project footprint and developed avoidance, minimization, and mitigation strategies, please refer to Table 4.4.1.5.

Table 4.4.1.5. Environmental Conditions/Areas of Concern: Approach/Strategy	
Environmental Conditions/ Areas of Concern	Approach/Strategy
Wetlands Impacts	<ul style="list-style-type: none"> Minimize wetland impacts by maximizing use of existing ROW Design retaining walls, embankments and refine grading limits to reduce impacts Provide for control of surface water runoff during construction.
Hampton River Impacts	<ul style="list-style-type: none"> Minimize construction of temporary structures. Provide for control of surface water runoff during construction Use efficient span lengths to optimize the number of piers in the river
Time-of-Year Restrictions (TOYR)	<ul style="list-style-type: none"> Identify timeframes for TOYR and activities allowed and prohibited during TOYR Incorporate TOYR in the project schedule Schedule construction activities to avoid TOYR work windows
Noise Analysis and Mitigation	<ul style="list-style-type: none"> Complete noise analysis in compliance with the Virginia State Noise Abatement Policy and the Highway Traffic Noise Impact Analysis Guidance Manual Develop Noise Abatement measures
Hampton Institute Historic District	<ul style="list-style-type: none"> Hampton Institute Historic District (National Historic Landmark) Perform work around the property in accordance with the requirements of the NEPA and Section 106 documents
Emancipation Oak Tree (and Loblolly Pines)	<ul style="list-style-type: none"> Exercise caution when working in the vicinity of the Emancipation Oak and the Loblolly Pines. Immediately address safety & health concerns of the Emancipation Oak and the Loblolly Pines. Provide special tree protection around Emancipation Oak and the Loblolly Pines
Contaminated Materials	<ul style="list-style-type: none"> Minimize the number of in-water foundations Use precast in-water foundation (precast piles, precast waterline footing shell)



Figure 4.4.1.4: Environmental Features Map

Integrating Environmental Management and Permitting into Schedule

Integration of the environmental milestones in the project schedule is extremely important to ensure timely and efficient delivery of the project. The DBT has integrated key environmental permits, environmental hold points, and approval activities into the project schedule, including:

- Pre-application meetings with Key agencies
- JPA application preparation and submittal
- USCG permit application preparation and submittal
- JPA application review and issuance of environmental permits
- Public and Stakeholder Outreach
- Time of Year Restrictions
- Essential Fish Habitat study
- Phase 1 ESAs for ROW
- Environmental permit compliance monitoring-for the duration of the project construction.

The DBT will track the environmental activities in the project schedule throughout design and construction to ensure that the schedule is met and that permit acquisition does not delay the project. The DBT has identified TOYR restrictions based on knowledge of the agency procedures and resources in the area, including a potential TOYR for in-stream work due to the migration of anadromous fish and possible TOY for other species. *Our project schedule has been developed to accommodate for such time of the year restrictions.*

4.4.2 Utilities

Approach for Utility Coordination, Adjustments, and Relocations

Utility coordination between the segments is vital to the successful opening of the corridor by December 2026. Although relocating utilities can be very expensive and time consuming, The DBT has the experience and local knowledge to get them moved

ahead of time. From our Team’s perspective, the utility scope is a critical component of any successful DB project delivery since the existing utilities come with potential risks that can significantly impact the project schedule and cost. Therefore, we have a group of experienced, members whose main task is to focus solely on overseeing and managing this scope. Our Team’s experience with similar DB projects have required coordination with many of the same utility companies that are present on this project which has allowed us to build on our relationship and continue on incorporating proven strategies in our approach to utility coordination, avoidance, and relocations. *Moreover, our Team’s mitigation strategy focuses on finding the best solution to accommodate each potential conflict, typically in the order: avoidance, protection in-place, minor adjustments, or relocation.*

During RFP phase, the DBT developed a comprehensive utility matrix/evaluation and initiated communications with the impacted owners. This early coordination has enabled us to develop a realistic project schedule.

1. Reviewed RFP Documents
 - Reviewed test-pit information
 - Verified utility information
 - Identified locations of existing easements
2. Provided feedback to design, permitting and right-of-way managers on potential conflicts/resolutions
3. Held meetings with utility owners for project overview and to request further as-builts and prior rights information
4. Developed a utility matrix to analyze conflicts and mitigation strategies
5. Held meetings with utility owner’s to discuss conflicts and resolution efforts
6. Coordinated with utility owners design, schedule and fees

The Team is set to use an approach to the utility coordination/relocation work that follows the *VDOT Utility Manual of Instructions - Utility Relocation Policies & Procedures*, which is standard

for addressing utility coordination/relocations in Virginia, with hands-on coordination efforts that will continue throughout the project's lifespan. This keeps the utility companies focused and cooperative towards the shared goal of timely and cost-effective relocations.

Our utility relocations plans will be categorized as follows:

1. **In-Plan Relocation:** Water, sanitary sewer, natural gas, lighting, CCTV, and bridge mounted duct banks will be coordinated as in-plan work with design/construction for these facilities incorporated into the project plans and work packages.
2. **Out-of-Plan Relocations:** Privately-owned utilities for power and telecommunications facilities will be coordinated as out-of-plan work with the utilities responsible for design/construction for required relocations and the Team managing this work for successful and on-time completion.

Utility Conflicts and Mitigation Measures

In pursuit of this project, our Team's first and top priority is to completely avoid utility impacts through design; therefore, our in-depth conflict analysis has included the analysis of the RFP, Franchise Agreements, Utility Company records, Miss Utility of Virginia records, and site visits by our utility coordination staff to identify all potential utility conflicts. We have developed a comprehensive Utility Matrix, to gain a thorough understanding of all potential conflicts, and upon award of contract, it will be utilized to confirm that the best course of action has been completed. *Furthermore, we have narrowed the Utility Matrix down to Table 4.4.2.3,* found at the end of this section, which highlights the anticipated conflicts and our Team's plan for resolution. Below is the utility assessment summary with each utility owner:

Dominion Virginia Power – Transmission | Dominion's High-Tension overhead line within the limit of work includes 12 poles located between N. King St. and S. Boxwood St. Most poles will be protected in-place as OSHA's regulations are met for working near them; but three poles, at the Hampton River crossing, are anticipated to cause a constructability conflict when it comes to driving piles and temporary trestles usage.

Dominion Virginia Power – Distribution | Dominion Distribution's facilities are found in various locations along the I-64 corridor. Many of these facilities will be protected in-place, however, some will have to be relocated due to conflicts with the proposed bridge widening, supports and construction operations. Moreover, all existing lighting within the project limits will be replaced per RFP requirements. Special considerations have been taken into account when it comes to the locations outlined in the Utility Matrix Summary, and more specifically the following

facilities:

- The first location is at Station 1699+29 which includes a utility pole and a guy wire.
- The second location is at Station 1721+46 which includes a utility pole and (2) guy wires
- The third location is between Station 1723+46 and Station 1725+01 which includes underground conduits.
- The fourth location is along Settlers Landing Rd. at Station 1765+34 which includes underground conduits.

Verizon | Verizon overhead facilities are outside the Limit of Work for this project, but the underground facilities, will need to be protected or adjusted in-place. The main locations of concern are the following:

- The first location is between Station 1717+12 and 1417+18 where test-holes are needed to verify size.
- The second location is along E. Pembroke Ave. which includes four (4) 4 in. PVC conduits jetted into bottom of the river.
- The third location is along S. Boxwood St. at Station 1741+69 which includes 1-1" cable, 1-2" PVC conduit and 1-2" cable.

Cox Communications | Cox overhead facilities are outside the Limit of Work for this project, but the main location of concern is along S. Boxwood St. at Station 1741+69 which includes 1-1" cable which will be protected in-place.

Metro Fiber Network and Segra | The main location of concern is along N. King St. at station 1699+84 which includes two (2) 2" PVC conduits, one conduit for each owner. The conduits will be protected in-place.

Windstream Communications | The main locations of concern where conduits will be protected or adjusted in-place are the following:

- The first location is between Station 1724+78 and 1732+50 which includes conduits per owner provided GIS information crossing the Hampton River.
- The second location is along Settlers Landing Rd. at Station 1765+50 which includes three (3) 2" PVC Conduits

Lumen | The main location of concern is along Settlers Landing Rd. Bridge in the vicinity of Station 1765+50 which includes three (3) 2" PVC conduits that will be adjusted in-place.

Sanitary and Waterlines | Existing sanitary and waterline relocations or adjustments owned by the Service Authority may be required for the proposed construction to accommodate storm drainage. The associated offsets will be performed as part of the standard construction operations. We have accounted for mitigations strategies (avoidance, protection or adjustment in -place) at various locations where

the water and sanitary lines are in conflict with the proposed roadway/structural elements.

Virginia Natural Gas | Many of the gas lines will be protected in place except for the following critical locations where relocation might be unavoidable:

- The first location is along River St. at Station 1721+47 which includes 2” PVC pipe.
- The second location is along Settlers Landing Rd. at Station 1766+55 which includes 6” Steel pipe.

ITS | As part of the project, there will be new ITS infrastructure within the project limits. The Team will coordinate the planned location of the new facilities so that they do not conflict with our proposed improvements.

Mitigation of Unexpected Utility Conflicts

As previously mentioned, during the proposal phase, we have contacted every utility company identified in the corridor and confirmed that the RFP plans list all the utilities that claim facilities in the corridor. Following contract award, if we encounter any unidentified utility, the SUE group as well as Miss Utility will be brought in to help track down the line to a point of identification. Once identified, the utility owner will be contacted immediately and be asked to field verify ownership, and if the line is active or abandoned. Consequently, utility designation will be performed at a Quality Level B to determine the approximate horizontal utility locations. Potential conflicts will be further evaluated by performing utility location services (test holes – Quality Level A services) to determine the exact horizontal and vertical location of the utilities. When the test-holes are performed, the field marking by the Miss Utility One Call System will be evaluated to determine if the utilities shown on the plans are correct and if any undesignated utilities are found. This approach has uncovered many undesignated utility systems on previous projects.

Coordination with Utility Owners and Reaction to Potential Delays

Prior to the Utility Field Inspection meeting, additional utility survey, utility designation, and test-holes will be assessed and conflicts will be added to the comprehensive Utility Matrix. This evaluation as well as cost sharing responsibility will be documented on VDOT form UT-9 that will be shared with each utility company during the UFI meeting. Additionally, the approved roadway and bridge designs and complete UT-9s will be distributed along with other customary documents. Furthermore, schedules for the utility companies’ submission of plans, specifications, and estimates (PS&Es) for the relocations will be established and utility owners will be reminded of the Buy America Requirements.

After the meeting, utility companies will be requested to submit documentation confirming prior rights to substantiate the cost sharing percentage determined on the UT-9. Our team will verify prior rights

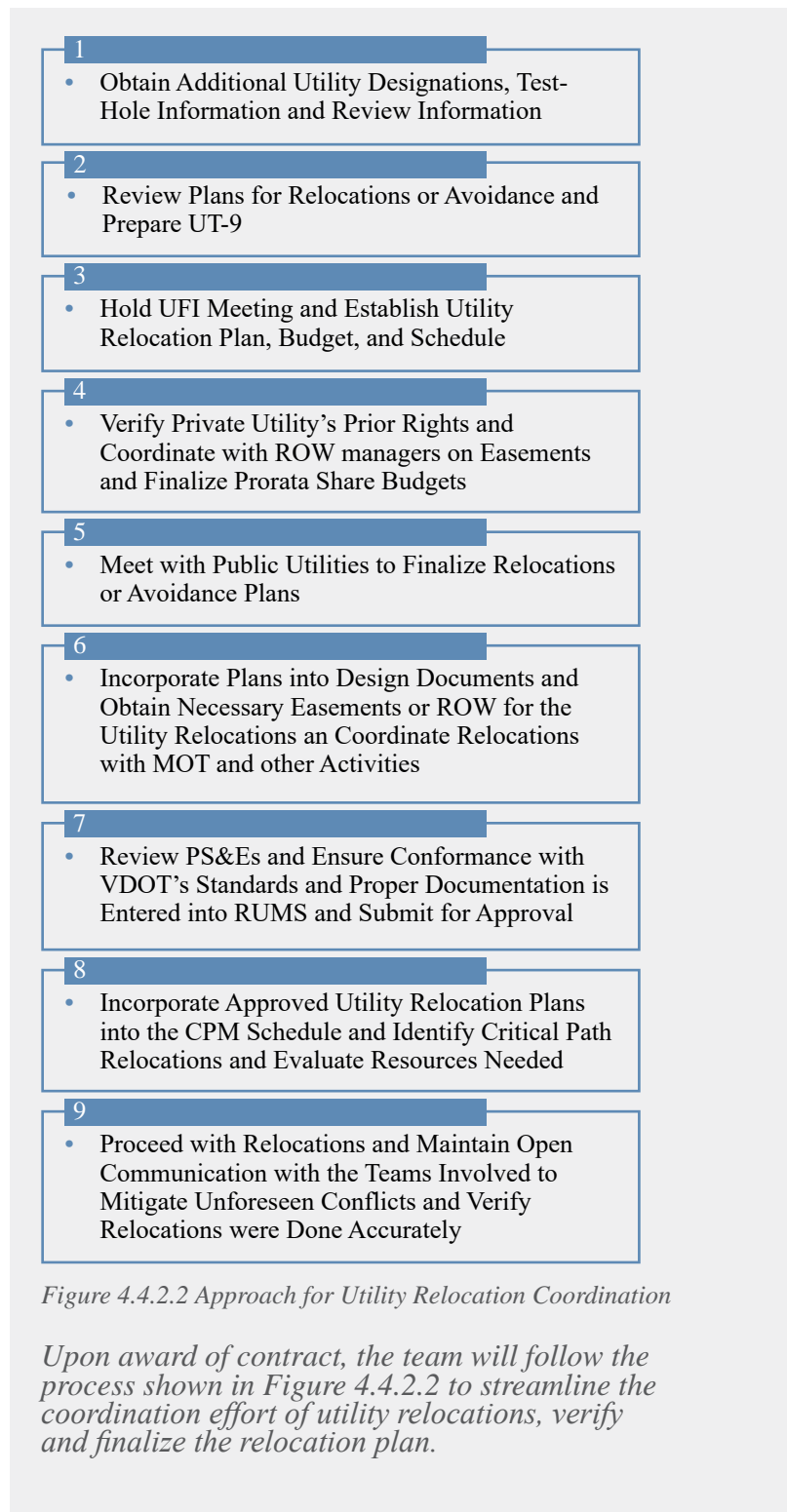


Figure 4.4.2.2 Approach for Utility Relocation Coordination

Upon award of contract, the team will follow the process shown in Figure 4.4.2.2 to streamline the coordination effort of utility relocations, verify and finalize the relocation plan.

information, and if there is a dispute, our team will take the lead in resolving it. Furthermore, we will prepare and submit to VDOT a Preliminary Utility Status Report within one hundred and twenty (120) days from the Date of Notice to Proceed that includes a listing of all utilities located within the Project Limits, a conflict evaluation, and cost responsibility determination for each utility. This report will include copies of existing easements, As-Builts or other

supporting documentation that substantiates any compensable rights of the utility owner.

When utility relocations are unavoidable, we will work with utility owners to minimize the length of the relocation and recommend alignments to avoid conflicts with the project and other utilities. Additionally, where possible, utilities without prior rights will be relocated within the existing Right-of-Way, and if easements are necessary, then the use of joint easements with assigned locations for each utility within it will be considered; this in turn will minimize the total width needed, reduce cost and impact on schedule. Moreover, we will hold at least bi-monthly coordination meetings with the utility companies and/or their design engineers to ensure that the relocations stay on schedule.

Furthermore, our Utility Coordination Team will review the PS&Es for conformance with state and federal regulations and procedures, the design plans and construction schedule; then, finalize the cost responsibility determination, and determine the approval of the requested reimbursement. A utility relocation agreement will be prepared, executed by the utility company, and submitted to VDOT for approval as a part of the PS&E assembly; moreover, all coordination will be documented in RUMS. Upon

PS&E approval, any permitting required, the utility company will be authorized to proceed with utility relocation.

As construction begins, the Team will hold kickoff meetings with each utility company prior to relocations taking place to review ongoing construction activities, environmental requirements, and safety measures. Our Team's coordinator and inspector will monitor utility relocation progress to ensure utility companies are actively completing the work in accordance with the agreed upon fully integrated CPM schedule, will proactively survey the utilities as they are being relocated to verify that they are constructed per the approved PS&Es, and communicate with the utility owner's field supervisors themselves. This will identify any mistakes early and allow for immediate correction in order to maintain the project schedule.

Progress meetings will be held with all utilities involved onsite on a bi-monthly basis, action items for each stakeholder will be recorded on a Utility Tracking Log and distributed. If it is apparent that a utility is falling behind, meetings will be held more often to partner together to resolve any issues and maintain the schedule.

Table 4.4.2.3 Critical Utility Matrix Summary

Utility Type	Owner	Station and Offset	Conflict Type	Resolution
Telecom	Unknown	1660+04, 169' R	Need test-holes to verify conflict with EB retaining wall	Adjust In-Place
Electric	DVP Distribution	1668+18, 91' L	Utility pole within the Proposed Cut limits	Protect In-Place
Electric	DVP Distribution	1681+62, 57' L	Utility Pole poses construction concerns	Protect In-Place
Electric	DVP Distribution	1681+80, 69' L	Utility Pole poses construction concerns	Protect In-Place
Electric	DVP Distribution	1682+76, 110' L	Utility pole & (4) guy wires pose construction concerns	Protect In-Place
Electric	DVP Distribution	1680+77, 158' R	Utility pole & (5) guy wires pose construction concerns	Protect In-Place
Electric	DVP Distribution	1699+29, 82' L	Utility pole & (1) guy wire poses construction concerns	Relocation
Electric	DVP Distribution	1700+18, 119' R	Utility pole & (1) guy wire poses construction concerns	Protect In-Place
Electric	DVP Distribution	1700+23, 114' R	Utility Pole poses construction concerns	Protect In-Place
Electric	DVP Distribution	1700+25, 151' R	Utility Pole poses construction concerns	Protect In-Place
Telecom	Metro Fiber Networks	1699+87, 96' R	(2) 2" conduits, in close proximity to EB pier #2	Protect In-Place
Water	NNWW	1711+61, 106' R	2" GIP in conflict with WB retaining wall	Adjust In-Place, Add Encasement
Electric	DVP Distribution	1710+68, 66' L	Utility pole within close proximity of the Proposed Fill limits	Protect In-Place
Water	NNWW	1716+88, 107' R	6" CIP in conflict with WB retaining wall	Adjust In-Place, Add Encasement
Telecom	Verizon	1717+12, 110' R	Need test-holes to verify conflict with WB retaining wall	Adjust In-Place
Electric	DVP Transmission	1725+44, 155' R	OVH Transmission line of 2 poles pose construction concern	Adjust In-Place
Electric	DVP Transmission	1725+44, 155' R	Transmission pole poses construction concern due to Static Wire location	Relocation

Utility Type	Owner	Station and Offset	Conflict Type	Resolution
Electric	DVP Transmission	1735+41, 157' R	Transmission pole poses construction concern due to Static Wire location	Relocation
Electric	DVP Transmission	1741+51, 74' L	Transmission pole poses construction concern due to operation space limitations	Relocation
Electric	DVP Distribution	1721+46, 62' L	Utility pole & (2) guy wires pose construction concerns	Relocation
Gas	VNG	1722+71, 121' R	2" PVC in conflict with WB & EB pier #1	Relocation
Electric	DVP Distribution	1723+46, 134' R	duct-bank in conflict with WB bent #4 & EB pier #2	Relocation
Telecom	Verizon	1725+37, 335' R	(4) 4" conduits close proximity to EB pier #2 (VA pier)	Protect In-Place
Telecom	Windstream	1724+78, 415' R	Location per as-built, poses construction concerns	Protect In-Place
Electric	DVP Distribution	1741+47, 98' L	Utility pole & (1) guy wire poses construction concerns	Protect In-Place
Telecom	Verizon	1741+81, 41' L	(1) 2" cable in close proximity to WB bent #29	Protect In-Place
Electric	DVP Distribution	763+34, 94' R	Utility pole & (2) guy wires pose construction concerns	Protect In-Place
Telecom	Windstream	1765+50, 50' L	(3) 2" conduits, in close proximity to WB & EB pier #1	Adjust In-Place
Telecom	Lumen	1765+50, 33' L	(3) 2" conduits, in close proximity to WB & EB pier #1	Adjust In-Place
Electric	DVP Distribution	1765+34, 75' R	Duct-bank in conflict with WB & EB pier #1	Relocation
Gas	VNG	766+46, 90' L	6" Steel pipe in conflict with WB & EB pier #3	Relocation
Water	NNWW	781+50, 73' R	12" DIP in conflict with EB retaining wall	Adjust In-Place, Add Encasement

During the RFP phase, the DBT identified and established communications with the major utility owners impacted by this project. The following table includes the summary of the DBT utility activities identified during the RFP phase:

Utility Owner	Contact [Name, Address, Email]	Date	Item Discussed
Dominion Virginia Power - Transmission	Rebecca Suther 10900 Nuckels Road 4th Floor Glen Allen, VA 23060 (804) 314-7364 rebecca.a.suther@dominionenergy.com	March 15, 2022	<ul style="list-style-type: none"> Feasibility, cost and schedule associated with 180 degree "mirror-imaging" the arms away from the bridge Feasibility, cost and schedule associated with the vertical extension of the transmission towers up to 20% Feasibility/cost/schedule associated with temporary outages Feasibility/cost/schedule associated with the use of mobile transformers in support of longer outages Verification of Dominion ROW Preliminary confirmation of clearances for the crane operations, erection scheme and other construction activities
Dominion Virginia Power - Transmission	Joseph R. Pincus Joseph R. Pincus 6104 Fiddlers Green Road Gloucester, VA 23061 (757) 928-2035 joseph.r.pincus@dominionenergy.com	March 28, 2022	<ul style="list-style-type: none"> Review Potential Conflicts & Relocations Discuss Cost Responsibility/ Prior Rights Discuss Relocation Cost Discuss Betterment Requests Discuss Required Clearances from facilities Discuss Relocation Process (if needed) Determine Who will be Responsible for Relocation Design (if needed) Determine Who will be Responsible for Construction of Relocations (if needed)

Verizon	J. Fulton 765 S. Battlefield Blvd. Chesapeake, VA 23227 (757) 482-8063	March 17, 2022	<ul style="list-style-type: none"> Review Potential Conflicts & Relocations Discuss Cost Responsibility/ Prior Rights Discuss Relocation Cost Discuss Betterment Requests Discuss Required Clearances from facilities Discuss Relocation Process (if needed) Determine Who will be Responsible for Relocation Design (if needed) Determine Who will be Responsible for Construction of Relocations (if needed)
Metro Fiber Networks	James Maynard 435 Redoubt Rd Yorktown, VA 23692 jmaynard@cableassociatesinc.com	March 21, 2022	<ul style="list-style-type: none"> Review Potential Conflicts & Relocations Discuss Cost Responsibility/ Prior Rights Discuss Relocation Cost Discuss Betterment Requests Discuss Required Clearances from facilities Discuss Relocation Process (if needed) Determine Who will be Responsible for Relocation Design (if needed) Determine Who will be Responsible for Construction of Relocations (if needed)
Virginia Natural Gas	Colton McWain 544 S independence Blvd. Virginia Beach, VA 23452 (757) 323-8446 cmcwain@southernco.com	April 1, 2022	<ul style="list-style-type: none"> Review Potential Conflicts & Relocations Discuss Cost Responsibility/ Prior Rights Discuss Relocation Cost Discuss Betterment Requests Discuss Required Clearances from facilities Discuss Relocation Process (if needed) Determine Who will be Responsible for Relocation Design (if needed) Determine Who will be Responsible for Construction of Relocations (if needed)

4.4.3 Geotechnical

The project team has reviewed the available geotechnical information for the I-64 HREL project contained in the RFP documents, specifically the Geotechnical Data Report (GDR), and will continue to perform further geotechnical investigations upon receiving the award. These efforts will validate and confirm our proposed design and reduce VDOT’s construction costs.

Approach to Identifying Geotechnical Risks

The best way to identify and control geotechnical risks is to collect and incorporate as much local subsurface data as possible into the design. To accomplish this, the DBT reviewed:

The Geotechnical Data Report, HREL Segment 4C, Hampton Virginia, June 17, 2021

- As-built plans showing the pile types, sizes, and driven pile lengths for each substructure of the existing bridges.
- The RFP Conceptual Plans for bridge structures. These plans were reviewed and compared to the As-Built plans to identify potential conflicts or issues of influence of the new structures/ widenings on the existing structures.
- The boring logs on the bridge plans for the existing structures along the alignment (King Street, Settler’s Landing, Hampton River

- Bridges Eastbound and Westbound)
- Boring logs from additional bridge structures in the vicinity including I-64 over LaSalle Ave., over N. Armistead Ave, over RipRap Road, and over S. Mallory Street.
- Geologic Map of the Hampton Quadrangle, Virginia, G. H. Johnson, 1975
- Geology of Mulberry Island, Newport News North, and Hampton Quadrangles, Virginia, Virginia Division of Mineral Resources, 1976
- Geologic Studies, Coastal Plain of Virginia, Virginia Division of Mineral Resources, Bulletin 83, 1973.
- Concrete Pile Design in Tidewater Virginia, by Martin, Seli, Powell, and Bertoulin, ASCE Journal of Geotechnical Engineering Vol 113, No. 6 June, 1987.

In general, the geology in the region of the project is coastal plain geology with the surficial materials along the alignment being part of the Lynnhaven Member of the Tabb Formation consisting of nearshore marine sand and clay. The Tabb Formation is underlain by the Norfolk Formation followed by the Yorktown Formation, east of the Hampton River whereas the Tabb Formation is directly underlain by the Yorktown Formation west of the Hampton River.

This difference in geology is easily seen in the difference in the borings at the bridges west of the Hampton River where there is a relatively thin surface deposit of sandy Tabb Formation soils

underlain by the green-gray silty sand with shell fragments, characteristic of the Yorktown Formation. East of the Hampton River, the top of the Yorktown Formation is substantially deeper and there is a sandy Norfolk Formation layer between the surface Tabb Formation and the Yorktown.

Groundwater is shallow and will be an important consideration for excavations needed for structures or subgrade improvement. In a coastal environment, such as this project, pockets of weaker, more compressible soils will be encountered, which will require remedial treatment to support embankments, retaining walls, and pavements. However, except for the loose alluvial deposits along the Hampton River, the general conditions are favorable for project development. Bridge structures will require deep foundation support for abutments and piers as well as concrete wing walls.

The DBT also incorporated past experience on VDOT projects and projects in the Tidewater area to help in identifying project risks. Since the project is a widening of the existing interstate, one of the key geotechnical considerations is construction adjacent to the existing embankments and structures. The areas of concern were identified by a review of the existing as-built plans and the proposed new construction. One area of concern is the influence of new fills on the adjacent existing roadway embankment and bridge abutment fills. In addition, protection of the existing roadway, embankments, and bridge structures during construction of the widening was identified as a challenge. Since batter piles were used for existing structures, new foundations must avoid encountering or influencing existing piles that extend beyond the footprints of the existing structures. Another concern is pile driving effects and foundation construction on the existing structure foundations. In the case of I-64 Westbound King Street Bridge, Pier 1, there is direct interference between the existing foundation and the proposed widening structure.

Our proposed Geotechnical design follows

VDOT requirements as outlined in the Standards and Specifications list included in the technical requirements portion of the RFP. From the geotechnical perspective, and for the major elements of the project, the documents most frequently referenced are:

- VDOT Materials Division, Manual of Instructions
- VDOT Manual of the Structure and Bridge Division
- VDOT Road and Bridge Specifications 2020 along with the Special Provisions
- AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications

The design follows LRFD in keeping with the AASHTO Bridge Design Specifications. Piles are analyzed using A-pile, the software referenced in the Manual of the Structure and Bridge Division. Drilled shafts for the Settler’s Landing bridge widening are analyzed, using SHAFT software which is also acceptable to VDOT. Lateral analysis is done using L-Pile, which is also acceptable to VDOT.

Approach to Mitigating Geotechnical Risks

Mitigating risks involves three basic steps, 1) identifying risks with an adequate program of subsurface investigation and ground characterization, 2) preparing designs and construction methods that address the key issues, and 3) monitoring, including using instrumentation during construction to assure that the established limit values for the project have been met and more importantly verify that the risks have been mitigated. If monitoring shows that mitigation measures specific to this project incorporated in the design and the construction approach are not adequate, additional measures can be taken before there is damage to or excessive influence on the existing structures.

The specific geotechnical risk issues pertinent to the project and their mitigation strategies are outlined in Table 4.4.3.1 below.

Table 4.4.3.1

GEOTECHNICAL RISK FACTORS	MITIGATION STRATEGIES
Influence of the eastbound Hampton River bridge on the westbound bridge piles in the area of the retained roadway embankment between the Hampton River and S. Boxwood St	Rather than widen the embankment to get the needed roadway width at the correct elevation profile, a back to back MSE wall was proposed. The vertical profile was adjusted to minimize the required amount of new fill. Geotechnical analysis was performed after correlating the available Cone Penetration Test (CPT) data from elsewhere on the project alignment to develop the soil parameters.
Total and differential settlement of embankments, retaining walls and bridge structures. Because the project grades will change, the widening will require widened embankments and, in some places higher embankments.	In-situ testing such as CPT and Flat Dilatometer Test (DMT) as well as laboratory consolidation testing will be performed to identify the soil behavior type and determine the strength and deformation characteristics of fine-grained soils. Advanced software such as Settl3 and Plaxis have been used to preliminary simulate loading and settlement behavior. The estimated settlement periods will be included in the construction schedule. A field monitoring program during construction, using settlement plates, settlement points, vibrating wire piezometers, and extensometers will be utilized.

Table 4.4.3.1

GEOTECHNICAL RISK FACTORS	MITIGATION STRATEGIES
Soft ground will make it a challenge to meet the project criteria for global stability, sliding resistance, bearing capacity, and settlement.	Insitu testing such as CPT, DMT, Vane Shear as well as laboratory CU triaxial shear with pore pressure measurements and direct shear testing will be performed to provide the best data for soil modeling. Global stability, bearing capacity, and settlement analysis have been preliminarily performed to model performance and develop mitigation methods. Ground improvement using a variety of methods including staged construction, preloading, wick drains in combination with preloading or surcharging, excavation and replacement, vibroflotation, stone columns, aggregate piers, and pile-supported embankments will be evaluated, and the final approved alternative (s) will be recommended. An instrumentation and monitoring program, incorporating settlement plates, settlement points, piezometers, extensometers, inclinometers, and survey points will be recommended and implemented, where needed. Monitoring programs will be developed, submitted to VDOT for review and approval, and subsequently monitored in the field by the GEOR or their representative.
Scour of foundations in the Hampton River and the Western Branch of the Hampton River.	Developing the scour profile at foundation locations and adjusting pile axial and lateral capacities to reflect the scoured channel profile.
The new and widened bridge piers constructed in the Hampton River may require temporary works to allow construction in and over water.	Coordinating with the construction team to develop the best strategy for sequence of construction and adequate work areas to perform the construction. Checking proposed strategies for interference with existing foundations. Providing design of temporary works that accounts for scour in the river channel. Monitoring the existing bridge structure with survey points and tiltmeters will be performed and observed by the GEOR or his/her representative.
Embankment settlement at bridge abutments could cause downdrag loading on new pile foundations.	<p>Preboring through embankments will be performed to reduce drag loads. The use of “cans” to provide a sleeve for piles, is also a strategy to reduce drag loading that may be implemented. Restriking piles to release negative skin friction following a settlement period is also a strategy that can be used to reduce downdrag. Another strategy is allowing a waiting period in the construction schedule prior to pile driving so that, even though downdrag may still occur, the post waiting period settlement will be within tolerances.</p> <p>In this geology, downdrag is often a settlement challenge rather than a structural capacity challenge. Consequently, the design can in some instances accommodate the downdrag by designing the pile length to meet a target settlement. This evaluation includes computing the expected settlement using the neutral plane method for various pile lengths and selecting an acceptable length based on pile settlement. This approach would be combined with a waiting period and settlement monitoring.</p> <p>Instrumentation will be installed prior to construction to monitor settlement and porewater pressures at the abutments specifically to assess impacts on pile performance and timing of pile driving. Typical instrumentation would be settlement plates, monitoring points and vibrating wire piezometers. If relevant to downdrag concerns, extensometers may also be used. The monitoring period will be accounted for in the construction schedule.</p> <p>Monitoring the existing structure with survey points and tilt meters will also be performed and observed by the GEOR or his/her representative.</p>
Influence of new pile foundations on existing foundations	During RFP phase, DBT has thoroughly evaluated the influence zone of the existing including the batter piles along their length and in the bearing stratum. Regarding EB Hampton River bridge DBT has developed an enhanced span arrangement to avoid the existing foundations and obstructions. At the King St. bridge WB Pier 1 DBT has developed a unique foundation solution that avoids existing piles significant improved constructability within the restricted space. Monitoring of the existing and new structures using monitoring points and tiltmeters has been programmed into the construction activities and schedule.
Disturbance of adjacent structures	During RFP phase we have developed several alternatives so that the foundation installation time could be most reliably predicted and shortened. Drilled shafts in similar materials in the tidewater area have presented significant installation difficulties that resulted in extended construction, which would increase disturbance. Consequently, to mitigate the potential challenge of drilled shaft installation in loose and running sands, micropiles are proposed as the primary foundation alternative. Vibration monitoring of pile driving activities at other bridge locations will be performed

4.4.4 Quality Assurance / Quality Control (QA/QC)

The project team considers Quality Assurance/Quality Control and safety as a top priority. The DBT approach to quality management uses proven, effective procedures for design and construction quality management. Our approach will instill VDOT with confidence that it will not incur unexpected oversight and administrative costs during the Project and that the Project will meet the expectations of VDOT and other project stakeholders. The DBT will deliver the highest standards of quality through the following actions:

- Partnering with VDOT to address all viewpoints and commitments and to reach mutually agreeable issue resolutions.
- Incorporating best practices and lessons learned from previous D/B projects, including VDOT D/B projects such as the I-95 SB over the Rappahannock, I-95 NB over the Rappahannock, Route 7 over the DTR and Route 7 & Battlefield Interchange; ICC A and B, D/B projects (MD)
- Using interdisciplinary quality, constructability safety, and environmental reviews
- Implementing a comprehensive QA/QC Plan in conformance with VDOT's Road Design Manual, Instruction and Informational Memoranda, and VDOT DB Manual (2018)
- Dedicating an independent Quality Assurance Manager (QAM) and an autonomous Quality Control Manager (QCM) with authority to stop work at any time
- Implementing the following clear provisions for tracking and correcting nonconforming work:
 - Perform a comprehensive review of the plans, specifications, and referenced requirements
 - Identify all testing, submittals, and quality requirements for each construction operation or item of work
 - Develop design checklists used by the construction, QC, and QA teams to confirm strict compliance with the RFP, other VDOT design criteria, design codes, project commitments, and general requirements (CADD, file formats, etc.)
 - Use the design checklist as a tool to establish the submittal log, agenda for pre-activity meetings, hold, and witness points

The DBT will not start construction activities without Released for Construction (RFC) Plans and appropriate pre-activity meetings, including task-specific Work Plans, a job hazard analysis, and discussion of quality requirements (hold points and testing/inspection requirements).

Approach to QA/QC Staffing Plan

Glen Mays, DBPM, has overall responsibility for the Project, including the quality management effort. The EIC, Scott Rhine, PE, will assist Glen in his QA duties. Within their jurisdictions, the three legs to the

Quality Management Plan (QMP) are as follows:

1. Design quality management
2. Construction Quality Control
3. Construction Quality Assurance

Overall assurance and auditing of the program will be performed by Scott, our EIC. Our Design QA/QC Plan, based on VDOT's minimum requirements for QA and QC on D/B projects, follows the successful plans that our lead engineering firm, EXP, developed for other VDOT D/B projects. It will be implemented by Design Manager Amir Arab, PE, with direct input from Scott and Glen, and with assistance from our Design Quality Manager, Amir Ahmadzadeh, PE, PMP, LEED AP and Construction Quality Assurance Manager, Andy Kondysar, PE. Amir will establish design criteria and checklists, using effective tools developed for the Military Highway CFI project and other D/B projects for VDOT.

Construction QC Manager will oversee compliance with VDOT's construction quality standards, as well as our own internal high-quality standards. The Construction QC Manager will be on-site full time and report directly to Construction Manager Durant Walters and have no assigned duties other than QC. He will manage the QC process and supervise the on-site QC staff of inspectors, technicians, and material testing specialists, placing precedence on critical issues and issuing non-conformance notices (NCNs) when necessary. He will also verify that QC inspection and testing staff are appropriately certified in accordance with VDOT requirements.

Quality Assurance Manager Andy Kondysar, PE, of Quinn Consulting, will manage the independent construction QA program. He will oversee a team of inspectors and technicians, as well as the QA materials-testing lab. The QA inspection team will feature full-time Lead QA Inspectors for bridge work and for roadway work. The QA Leads will supervise the fieldwork of the QA Testing Technicians.

The timing of this procurement offers a great opportunity for the DBT to build on the relationships developed with VDOT staff in the delivery of the \$116 million I-95 SB over Rappahannock, in Fredericksburg, VA. Along with our DBPM and other project management staff, Quinn Consulting will again serve in the independent QA role—so there will be no learning curve in the implementation of VDOT's D/B performance evaluation program.

Project-Specific Checklist to Seek Approvals and Minimize Schedule Impact

The DBT developed a project-specific checklist based on the RFP requirements, VDOT, and our experience working on local DB projects. This checklist will be used along with VDOT's standard LD-436 and our internal QC checklist, which has been developed through our extensive DB and VDOT experience, to manage stakeholder expectations including those of the adjacent HRBT project, the Town of Hampton, local businesses, and Dominion Energy addressing

items such as MOT, SWM, ITS, signal modification and timing, lighting, directional signs, etc.

Approach to QA/QC During Design

The Design Team implements a project-specific and comprehensive Design Quality Management Plan (DQMP) that encompasses both Quality Assurance and Quality Control (QA/QC) requirements to deliver quality design packages that will need minimal reviews by VDOT and be approved through one submission. Our QA/QC process is based on ISO 9001 standards. Upon Notice to Proceed, we will develop and submit DQMP for VDOT’s review and approval. As part of our commitment to quality, the DBT will identify levels of authority, functional responsibilities, program requirements and the organizational structure for the direction and implementation of our DQMP during the design process, from scope definition through construction. “ALL” DQMP requirements will apply to our subconsultants who are all responsible for implementing and conformance to the procedures set forth in the DQMP. The QC and QA reviews will be conducted by engineers and professionals who are experts in their fields and have in-depth knowledge of the subject matter at hand. The DQMP will be developed to address specific design quality items for this complex project and will include the following Key elements:

1. Design schedule
2. File structure and setup
3. Design criteria/standards validation
4. Design quality program trainings and updates during the life of the project
5. Implementation of the design quality program and continuous monitoring and audits during the life of the project
6. Design support during the construction including RFIs, NDCs, FDCs, etc.

Our proposed DQMP will be based on our collective best practices (EXP and subconsultants) for Quality Assurance and Quality Control Procedures (tailored for this project) and will be modeled based on ISO 9001 Standard Requirements. It will provide the Design Manager, discipline leads and support staff (including Subconsultants) with clear set of responsibilities and methods to review the quality of our work. Given our experience with previous VDOT projects, we anticipate a two (2)-tier DQMP: **FIRST** the deliverable undergoes Quality Control (QC) by “more” experienced and qualified staff who did not participate in the design development. The rigorous Quality Control process includes checking and reviewing deliverables, backchecking, and documenting all quality control checks. **SECOND** the deliverable undergoes Quality Assurance (QA) implemented by the Design Quality Assurance Manager (DQAM) supported by other discipline experts/delegates (as needed) who did not participate in the design development and QC. Our DQMP is intended to meet and exceed the quality goals

and Minimize VDOT’s Efforts. The DBT’s QA/QC Plan will be based on the refined and proven process that we have successfully used on all of our VDOT and other DOT projects, including I-95 SB over the Rappahannock River, I-95 NB over the Rappahannock River, Route 7 & Battlefield Interchange, Transform 66 Outside-the-Beltway, Route 7 over the DTR, and Independent Design Quality Assurance for George Washington Memorial Parkway (DB Project).



Construction Quality Management to Minimize VDOT’s Efforts

We will provide a construction QA/QC effort that focuses on complying with the plans and specifications, ensuring quality workmanship, and producing easily auditable documentation—thereby minimizing VDOT’s efforts. We will develop our construction QMP during the design phase, using feedback from quality, safety, field, and design personnel to tailor a project-specific plan that uses Wagman’s QMPs from past VDOT DB projects as a template. Key elements of our construction QMP are as follows:

1. Dedicated QCM

A photograph of a concrete bridge structure over water. The bridge features multiple concrete pillars supporting a series of horizontal beams. A metal guardrail runs along the edge of the bridge deck. The water below is dark and rippled. The sky is blue with scattered white clouds. The number '4.5' is overlaid in a large, white, sans-serif font in the upper right quadrant.

4.5

Construction of the Project

4.5 Construction of Project

In this section, the DBT describes our approach to safely constructing and completing the project in a manner that minimizes impacts to the traveling public (local commuters, I-64 through traffic, and pedestrians), recreational facility users, the boating community and adjacent properties / facilities. Our approach incorporates lessons we have learned while delivering numerous interstate and complex water crossing projects, including VDOT’s I-95 SB RRC DB Project and the Pembroke Ave. Bridge Replacement (J62).

4.5.1 Sequence of Construction

We have developed an optimized sequence of construction and commit our vast local resources (manpower, equipment, and facilities) to this project such that we will deliver the Interim Milestone by June 10, 2026 and, achieve Final Completion by December 10, 2026 both earlier than required. These and other enhancements related to our construction approach are summarized with their specific benefits in Table 4.5 on the following page and identified throughout this section by blue font .

The planned sequence of construction and related schedule shown in Section 4.6 is based on beginning work in areas as soon as possible after constraints are removed or required pre-work such as design is completed.

The key factors that influenced the planned sequence of construction for the Project include:

- Identifying work activities that could begin early and are not constrained by:
 - Completing geotechnical analysis,
 - Obtaining all environmental permits,
 - Acquiring right of way and relocating utilities.
- Working around environmental time of year restrictions (TOYR).
- Removing VDOT and Utility Relocations from the Critical Path
- Minimizing any disruption and safety concerns to the traveling public by physically separating traffic from the construction operations and staging areas throughout the full length of the Project while minimizing the number of major traffic shifts required to maintain traffic.
- Maintaining an aggressive design schedule to provide enough time on specific activities for comprehensive constructability QA/QC reviews, and all required agency reviews.
- Providing ample lead time to secure materials.
- Economized profile and improved earthwork balance for the project including replacing over 17,000 SF conceptual bridge deck with retained embankment between the Hampton River and S. Boxwood.
- Early identification of soil conditions on-site to determine appropriate replacement or remediation while accommodating settlement periods.
- Coordination with adjacent construction projects

including HRBT, HREL Segment 4A/4B, HREL Segment 1A, North King St. Section 4 and Replace Delaminated OH sign panels.

The Team will construct this project in three major construction traffic (MOT) phases and 11”x17” graphics are provided in Volume II for each phase depicting our enhanced sequence of construction. This allows work to be constructed along the entire 2 ½ mile corridor completely separated from the traveling public allowing construction staging and more efficient and safer construction operations along the length of the project on closed roadways. The three major MOT phases are:

- 1. Phase 1:** Reconstruct I-64 WB lanes
- 2. Phase 2:** Reconstruct I-64 EB lanes
- 3. Phase 3:** Reconstruct Median of I-64

Phase 1 will be comprised of three sub phases; Phase 1A, 1B & Phase 1C.

Phase 1A we will strengthen the outside shoulders of I-64 EB utilizing milling and paving operation using temporary lane closures during times permitted by the RFP. In Phase 1A we will also start the rehabilitation of the triple 48-inch culverts at Brights Creek as part of an early works package.

Phase 1B will shift I-64 EB lanes onto the reconstructed shoulder and right travel lane and channelize I-64 WB onto the two outermost lanes using a long term stationary work zone with Traffic Barrier Service Concrete TBSC to allow the removal of the median barrier, construction of mainline I-64 temporary crossovers, and temporary reconstruction of the median to support the lane widths. This allows all lanes of traffic to be switched to I-64 EB and opens I-64 WB for reconstruction, to include bridge widening overlay, retaining walls, noise walls. DBT member, Wagman successfully implemented four mainline I-95 (ADT 224,000) traffic shifts on VDOT’s Rappahannock River Crossing (RRC) DB Projects. All of these were safely performed during off peak hours within VDOT allowable time frames.



Figure 4.5.1.2: DBT I-95 NB GP Temporary Crossover VDOT I-95 SB RRC DB

4.5 Construction Enhancements

Benefits & Enhancements								
Safety For The Traveling Public, Construction Operations And The Environment								
Operations And Coordination With Adjacent Projects								
Schedule								
Constructability With Focus On Constrained Work Zones In An Urban And Marine Environment								
Outreach, Stakeholders and Public Acceptance								
Future Inspection, Maintenance And Asset Performance								
Cost								
Sequence of Construction	The optimized sequence of construction will enable the DBT to deliver the project by December 10, 2026, twenty days earlier than the Final Completion and achieve the interim milestone by June 10, 2026, twenty two days earlier than the date required in Part 1, Section 2.3.1 of the RFP	✓	✓	✓	✓	✓	✓	
	The shifting of the horizontal alignment at B-673 I-64 EBL will allow expedited installation and removal of temporary works in the Hampton River enabling the DBT to propose the unique milestone of having all temporary construction works removed from the river by February 28, 2026.	✓	✓	✓	✓	✓	✓	✓
	All underdrains will be inspected by a third party not involved in design or construction. Inspections will be performed, reviewed, and provided to VDOT after intermediate asphalt is complete and prior to transitioning to subsequent MOT phases. Our QA/QC Plan and CPM identify these inspection activities.	✓	✓	✓	✓	✓	✓	✓
Safety	DBT commits to providing a full-time Safety Manager on the project. The Safety Manager will have no-construction related assignments or duties and will provide project specific safety training with emergency responders on fall retrieval and water rescue.			✓	✓	✓	✓	✓
	Our enhanced MOT concept will allow construction vehicles to enter and exit the work zone at the project termini with zones for deceleration/acceleration instead of requiring traditional temporary mainline I-64 lane closures. All construction entrances will be marked for easy identification.			✓	✓	✓	✓	✓
Staging	Our MOT phasing requires 3 major phases and the traveling public will be completely separated from construction areas providing continuous areas of existing I-64 for staging and more efficient construction the full length of the project. This will be achieved by shifting mainline I-64 WBL and EBL using temporary crossovers. The DBT safely and successfully implemented mainline interstate crossovers for both I-95 NB and SB on VDOT's Rappahannock River Crossing DB Projects. All of these mainline I-95 GP (ADT 224,000) traffic shifts were safely performed within VDOT allowable off peak time frames.	✓	✓	✓	✓	✓	✓	
TMP	DBT has already performed the preliminary VISSIM analysis of all MOT phases which shows acceptable LOS and corridor travel times. The DBT will run additional microsimulations during final design of all MOT schemes to support our Type C TMP.			✓	✓	✓	✓	
	Our MOT plans do not require work zone speed reductions. All temporary lane shifts and mergers will be designed for the full posted speed limit and all temporary geometry and shifts will meet the standards for the full posted speeds.			✓	✓	✓	✓	
	Existing shoulders within the project limits will be improved as required to support our MOT plan. Shoulders or emergency pull off areas will be provided.		✓	✓	✓	✓	✓	
	All new MOT patterns will be videoed immediately after installation. All MOT patterns will be videoed at the end of each work week and prior to all Holidays. MOT inspections will occur 7 days a week to verified all phases for conformity and operational acceptance. All inspections and videos will be documented in the project files.			✓	✓	✓	✓	
Stakeholder Coordination	Before each MOT phase implementation, drive thru simulations (Video Graphic Models) will be developed and given to VDOT's Public Outreach Team for public information.			✓	✓	✓	✓	
	DBT has unparalleled understanding of the Hampton River, its recreational users, site-specific characteristics of the Pembroke Ave. Bridge, and stakeholders expectations having reconstructed the Pembroke Ave. Bridge as General Contractor. Our access and staging plan for B-673 and B-674 eliminates temporary trestle within the navigational channel as anticipated by the RFQ. Channel access for recreational boats/marine traffic will be unrestricted.	✓	✓	✓	✓	✓	✓	
	DBT's plan incorporates specialized hoisting equipment for B-673 adjacent to Dominion's facility maximizes time frames available to perform this work.	✓	✓	✓	✓	✓	✓	
	In addition to monthly CPM updates, DBT best practices will include detailed 4 and 10-week look ahead schedules that will be shared with all adjacent projects. This allows for operational coordination among various projects and our simplified MOT scheme streamlines SWM and ESC coordination.	✓	✓	✓	✓	✓	✓	
Incident Management	DBT will use various communication methods including video-3D modeling, newsletters, project brochures, websites, social media, press releases, and media campaigns as coordinated with VDOT's Office of Communications.			✓	✓	✓	✓	
	The DBT's CMIC, Danny Plott has performed the same role on another VDOT DB mega project in Hampton Roads and has existing relationships with VA State Police Area 46 leadership and multiple wrecker services. Danny will employ previously developed best practices to ensure "Quick Clearance" of stalled vehicles within the project limits and the DBT's incident response truck will be enhanced to include an arrow board.	✓	✓	✓	✓	✓	✓	

In **Phase 1C** all I-64 WB traffic is switched to I-64 EB, allowing I-64 WB to be reconstructed. Bridge widening for Hampton River Bridge, King Street, Settlers Road; bridge overlay, bearing replacement and substructure repair on Hampton River Bridge, King Street, Settlers Road and Rip Rap Road; Owens Street underpass, mainline pavement & shoulder reconstruction or mill and overlay; retaining walls, noise walls, drainage, signals, lighting overhead signs, and ITS infrastructure. **All underdrains will be inspected by a third party not involved in the design or construction. Inspections will be performed, reviewed, and provided to VDOT after intermediate asphalt is complete in each phase and prior to transitioning to subsequent MOT phases.** This enables any corrections or repairs to be made while the work area is still closed to the traveling public. **Our QA/QC Plan and CPM identify these inspection activities.**

Phase 2 is broken into 2 sub-phases 2A & 2B

Phase 2A will again channelize traffic into the two outermost lanes in each direction using TBSC to allow the reconstruction of the crossovers and repositioning of median TBSC as required. Once the crossovers are completed all lanes of traffic will be shifted to I-64 WB

Phase 2B begins once all lanes of traffic are on I-64 WB and allows for construction of Bridge widening for King Street, Settlers Road; bridge overlay, bearing replacement and substructure repair, King Street, Settlers Road and Rip Rap Road; total reconstruction of I-64 EB bridges over Hampton River and S. Boxwood Road & Hampton River Tributary; mainline pavement & shoulder reconstruction or mill and overlay; retaining walls, noise walls, drainage, signals, lighting overhead signs, and ITS infrastructure.

Phase 3 is the final phase and contains 2 sub-phases Phase 3A and Phase 3B

Phase 3A shifts the I-64 EB traffic to the outermost EB roadway and places TBSC to establish a protected work zone in the median of I-64. With traffic in the outside lanes construction will be performed in the median to remove crossovers, reconstruct shoulders, and construct the permanent median barrier. Overhead sign structures will be placed into final location with all signs, ITS and tolling equipment installed.

Phase 3B begins once the median work is complete and consist of removal of the TBSC, pavement milling, overlay, pavement markings and roadway finishes placing traffic into its ultimate position opening traffic to the newly constructed toll lanes.

Additional Information

This project has a unique feature that must be constructed within our construction phases: The

Hampton River Bridge. In phase 1B once the traffic has been placed on I-64 EB, we will widen the WB Hampton River Bridge with piles, substructure, girders, deck and parapet; rehabilitate substructure & superstructure and overlay the deck. In phase 2 when traffic has been switched to I-64 WB, we will demolish the existing EB bridge and replace with two bridges: one over the Hampton River, the second over S. Boxwood St. and the East Branch of the Hampton River.

Phase 1 - WB Hampton River Bridge widening and rehabilitation sequence of construction

The access to construct the widening of Hampton River bridge WB is challenging. The access is detailed on page 80 of Volume II. From River Street to the Hampton River Bridge, we will be working from the existing ground. From the west bank of the Hampton River to Pembroke Avenue we will install a temporary trestle. From Pembroke Avenue to the western bank of the land mass at station 1730+50 of the Hampton River we plan on using a marine operation to drive pile, build substructure and erect girders. We will use a 300-ton crane on an 80-ft by 80-ft barge for pile driving and girder erection. Smaller cranes and barges will be employed for the substructure construction, substructure repair and material storage. Piles and girders will be delivered to the project on barges to eliminate the need for trucking and re-handling. Any substructure repair below the pier cap will be completed with barges. From station 1730+50 to the eastern bank of the Hampton River we will install a temporary trestle to support construction of the I-64 WB widening, pile driving, substructure construction, beam erection and deck placement. This trestle will not encroach upon the Pembroke Ave. Wetland Mitigation Site. We will complete the widening, substructure and superstructure work utilizing a 300-ton crane and smaller support equipment from the trestle.

From the east bank of the Hampton River to the west bank of the East Branch of the Hampton River, we will construct access roads to support the construction operation with a road crossing at S. Boxwood St. To complete the WB bridge to the eastern abutment we will need to install a temporary trestle over the East Branch with an access road to the abutment.

We will use scaffolding hung from underneath the deck for substructure repair on pier caps and the replacement of bridge bearings. Bridge joints will be removed from the existing deck. The bridge deck overlay will start as early as practicable and be completed before all traffic is shifted to the rehabilitated WB bridge.

Phase 2 -EB Hampton River Bridge & East Branch of the Hampton River Bridge Demolition & Construction Sequence

Once traffic has been relocated to the rehabilitated

WB Hampton River Bridge, we will access the work as detailed on page 80 in Volume II.

Demolition | Demolition will begin in the middle of the bridge at suspended span (between existing bents no. 15 and 16) and proceed concurrently in both directions (west & east) with multiple crews. To the west the bridge and girders will be removed completely in a single operation. To the east the span will be removed one at a time to allow pile driving. (Discussed below) The bridge deck will be removed from above either by cutting the deck into manageable slabs or use of demolition tools such as breakers and shears, and the existing girders will be lifted from the adjacent span and placed onto trucks or barges for disposal. The substructure will be removed in multiple operations. Land based substructure demo operations will be performed from River Street to Pembroke Avenue and from the eastern bank of the Hampton River to S. Boxwood St using access roads constructed along the existing structure. We will utilize cranes and conventional demolition equipment to remove the substructure 2-ft below ground level. From Pembroke Ave to the eastern bank of the Hampton River the piles and substructure will be removed to 2-ft below mudline using conventional demolition machinery from barges. The marine operation is confined between the existing WB bridge and the power lines and our detailed access plan allows enough room for multiple barge configurations. From EBR station 731+25 to the eastern bank of the Hampton River we will install a temporary trestle to demolish the bridge substructure. From S. Boxwood St to Abutment B, the bridge demolition will be accessed from temporary access roads and a very short temporary trestle (approx. 176 LF) over the Eastern Branch.

Piling & Substructure | From River Street to Pembroke Ave, piles will be driven by land cranes and the pier caps will be constructed from land. We will continue with a marine operation from Pembroke Ave to station 731+25. From station 731+25 to the eastern bank of the Hampton River, we will drive the pile from the existing bridge deck with a 200-ton lattice boom crawler crane. The DBT has reviewed the current load rating and inspection reports and performed a structural analysis accounting for any capacity loss on the existing bridge to be removed and confirmed satisfaction of 107.21(d) for construction loading of structures.

Using a similar construction approach, DBT member, Fay SE successfully analyzed the construction loading on the existing Rte. 105 bridge over the Lee Hall Reservoir, engineered and installed false/work grillage to support large cranes used for demolition and reconstruction.

The demolition and the pile driving will proceed one span at a time to allow for the pile driving operation. To drive pile in the marine operation, we will use a 300-ton crane on an 80-ft by 80-ft barge and for pier caps we will utilize a 150-ton crane on a 60-ft by



Figure 4.5.1.1: DBT reconstruction from existing bridge EFLHD Rte. 105 Lee Hall Reservoir

60-ft barge. The DBT has engineered the new spans such that the 60-ft x 60-ft barge can fit in between the new pile foundations to construct the pier caps. From station 731+25 to the eastern bank of the Hampton River, we will use the analyzed lattice crawler to drive pile from the existing bridge deck prior to removal. Substructure will be constructed from the trestle utilizing smaller crawler cranes and specialty hydraulic crawler cranes to avoid the power lines while maximizing available work periods.

From the eastern bank of the Hampton River to S. Boxwood St. abutment we will construct MSE walls and embanked fill. From S. Boxwood St. to abutment B, we will construct the bridge from land using access roads, causeways and temporary trestle utilizing the 300- ton crane for pile driving and other support cranes for the substructure.

Girder erection | Due to the existing power lines, it will be very difficult to erect the girders with conventional cranes. We have developed a plan to shift the new EB Bridge to the north and away from the existing power lines. Girder erection will start at Abutment B on the east bank of the Hampton River. The girder erection will be a two-crane pick with a specialty 250-ton hydraulic boom Tele-Crawler on the trestle and a 135-ton hydraulic crane starting behind the Abutment. When each span is erected the 135-ton hydraulic crane will walk out onto the newly erected girders on temporary engineered false-work/grillage to be in a position to erect the next span (Page 80 of Volume II). The bridge superstructure will be engineered to support his construction loading satisfying 107.21(d). Once we erect the girders through span 9 the erection will continue with a marine operation. The girders will continue to be erected using two cranes, the 250-ton Tele-crawler on a barge and the 135-ton crane will continue to walk out onto the newly erected girders. Once we reach Pembroke, girder erection will continue with a 250-ton crane on land and the 135-ton hydraulic crane.

On the second structure from S. Boxwood St to Abutment B, girders will be erected with conventional cranes from the access road or causeway.

Superstructure | The bridge deck and parapets will

be constructed starting at Abutment A and continuing to Abutment B on the eastern bank of the Hampton River. Over the Hampton River Tributary the bridge deck construction will begin at S. Boxwood (Abutment A) and continue to Abutment B on the eastern end of the structure. Support material for the bridge deck operations will be loaded from barges, temporary trestle, access road or from WB I-64 using allowable temporary lane closures. Concrete will be placed utilizing concrete pumps with slick lines (temporary pump lines on the deck) and a spreader system with bridge deck finishing machines. Parapets will be constructed from the new deck. Once one of the bridge decks is completed and cured to strength, the retained embankment from Abutment B at the eastern bank of the Hampton River to S. Boxwood will be paved.

Safety & Mobility

The DBT's top priority on the project is safety of our employees, subcontractors, and the traveling public. We have a proven record of safely delivering multiphase interstate projects as evidenced by recent national and regional industry safety awards from ARTBA, VTCA, and AGC-MD. In 2019, DBT member Wagman was recognized by VTCA as the winner of the Contractor Safety Award in the 100,000 to 250,000 man-hours category. To ensure the proper focus on safety the DBT is assigned a full time Safety Director, Mr. Andrew Weston to the project. Andrew will have no construction related assignments and will oversee the projects safety program from development of the Environmental Health and Safety Plan (EHSP) throughout training, physical construction and project acceptance. In addition to training the members of the DBT, Mr. Weston will provide project specific training the local emergency responders in fall retrieval and water rescue.

Safety for the traveling public will be assured by the development of a detailed Traffic Control Plan (TCP). This plan will minimize traffic shifts and lane closures, maintain or exceed minimum lane widths, consider line of site when planning for ingress to and egress from construction work areas, and avoid reductions in speed limits. Temporary concrete barrier wall or guardrail will be used to protect long-term work areas. We will utilize a certified, experienced traffic control supervisor and crew dedicated to installing, maintaining and removing the temporary traffic control devices. All new MOT patterns will be videoed immediately after installation. All MOT patterns will be videoed at the end of each work week and prior to all Holidays. MOT inspections will occur 7 days a week to verify all phases for conformity and operational acceptance. All inspections and videos will be documented in the project files. We will conduct regular drive-through video inspections of the project and review for compliance with the approved TCP.

The Team appreciates the criticality of keeping vehicular traffic moving safely while making

the necessary infrastructure improvements; to accomplish this, we plan to perform the majority of our construction behind barrier. This also enables us to perform substantive portions of the work during the daytime. Our construction team has already worked closely with our design team to develop a sequence of construction that completely separates the traveling public from the construction operations using TBSC while providing construction vehicles to enter and exit the work zone at the project termini with zones for deceleration/acceleration instead of requiring traditional temporary mainline I-64 lane closure. All construction entrances will be marked for easy identification. We will continue to perform detailed constructability reviews of the TMP and MOT plans, ensuring that our plans provide safe and effective advance warning and transit through the work zone.

The DBT's CMIC, Danny Plott has performed the same role on another VDOT DB mega project in Hampton Roads and has existing relationships with VA State Police Area 46 leadership and multiple wrecker services ensuring efficient coordination and rapid incident response. Danny will employ previously developed best practices to ensure "Quick Clearance" of stalled vehicles within the project limits and the DBT's incident response truck will be enhanced to include an Arrow Board. Existing shoulders within the project limits will be improved as required to support our MOT plan. Shoulders or emergency pull off areas will be provided.

Additionally, our plan will provide the following; on-call towing service, emergency pull off/refuge areas, access through all work zones for emergency responders, pre-approved messaging for a variety of incidents (coordinated with VDOT's corridor incident management plan), evacuation plan and an emergency contingency plan (notification and response matrix coordinated with VA511 and pre-approved detour routes with staged equipment and materials.)

The DBT relieves the traveling public by making it one of our priorities to be cognizant of the overall traveler mobility limitations that may be present due to the on-going construction activities of all of the adjacent and regional projects. We understand the requirements of the RFP, particularly Part 2 Section 2.10. We are conscious of other construction projects and the traffic ramifications they may pose; and will work with VDOT to minimize impediments to the traveling public and maintain a safe work zone throughout the I-64 corridor. We will accomplish this through coordination with other contractors and VDOT, as Wagman has demonstrated on the I-95 SB RRC & I-95 NB RRC projects. The DBT has personnel trained and familiar with the use of VDOT LCAMS.

The mobility and safety of recreational users of the Hampton River and adjacent shared use paths or sidewalks is also a priority for the Team. The DBT

will develop an Aide to Navigation Plan (ATON) to notify the boating community with proper signage, buoys, lights and channelizing devices to ensure safe passage way through the navigational channel and the work zone. We are local and have visited and used this river ourselves and have also used the local shared use paths or sidewalks so we will be engaged to make sure that these facilities are maintained and possibly improved. DBT member Fay SE brings unparalleled understanding of the Hampton River and its users and their expectations having reconstructed the Pembroke Ave. Bridge as the general contractor for VDOT's J62 Project. By previously performing the same scope required for this Project in the same location we have hands-on knowledge from working in this exact waterway and proven methods to maintain recreational water use and maintain boater safety. As such, our trestle/marine fleet scheme maintains construction access and minimizes interruption and impacts to the boating community. Our plan will notify all users of changes and inform the boating community of the proper channels through the work zone.



Figure 4.5.1.3: DBT Replacement of Pembroke Ave. VDOT J62

Unique Milestone

The shifting of the horizontal alignment at B-673 will allow the DBT to expedite the installation and removal of our temporary works in the Hampton River enabling the DBT to commit to a unique milestone by removing all temporary construction works out of the river by February 28, 2026 providing benefit to the environment and all river users.

Operations through the work zone

One of the key considerations when developing the Sequence of Construction and MOT phasing for the project will be to minimize any disruption and safety concerns to the traveling public by minimizing the major traffic shifts/detours required to maintain traffic. A summary of the traffic shifts required for each phase and sub-phase within the project area are below. The project area will have a maximum of four traffic shifts.

- Phase 1A is an off-peak mill and paving operation using temporary lane closures to strengthen the I-64 EB shoulders

- Phase 1B is a lane shift to remove the median barrier, reconstruct the median (temporary) and build the crossovers
- Phase 1C is a major shift to relocate all traffic onto I-64 EB and perform new construction widening and rehabilitation of substructure and superstructure elements to include latex modified concrete deck overlay
- Phase 2A will switch back to two lanes along both EB and WB existing bridges in each direction to allow reconstruction of the crossovers
- Phase 2A is a major shift of all lanes of traffic to I-64 WB
- Phase 2B is reconstruction of I-64 EB
- Phase 3A will split traffic to two lanes in each direction to allow for reconstruction of the median to include new barrier and final finishes
- Phase 3B will be final milling, paving and striping with temporary lane closures.

The DBT will draw on their experience with major traffic shifts on high-volume interstates such as I-95, I-70 and I-66 to successfully plan and execute this operation. We will closely coordinate with VDOT and implement measures such as temporary pavement and extended work hours to minimize the disruption to traffic. All lanes will be in accordance with the RFP requirements. Signage and temporary traffic control devices will adhere to VDOT standards and the Manual on Uniform Traffic Control Devices. The operational level through the work zone will be maintained.

The DBT worked together to identify all critical construction activities, including access points and staging requirements, and has developed a plan that accommodates these activities with minimal impact to the traveling public. For example, we will provide detailed plans including acceleration/deceleration lanes, temporary pavement, temporary barrier walls and additional signage to safely guide construction equipment and material deliveries in and out of the work zone areas. We will analyze and construct temporary drainage during all construction phases to ensure that the travel lanes are free of water ponding during storm events. Significant advantages of our MOT scheme are that it provides separation between opposing traffic, minimizes the number of construction phases, constructs large portions of work outside of traffic, and requires only two major mainline traffic shifts.

Staging & Storage

The DBT possesses extensive local resources including over 500 construction professionals, an equipment fleet valued at over \$75M and has started to discuss agreements with local property owners for convenient offsite staging. The resources are available 24/7 allowing us to maximize work outside the peak traffic periods. All staging areas both offsite and onsite will be detailed in the project's SWPPP and properly permitted. Material staging for roadway construction will occur predominantly in

station between construction entrances and the active work areas. We will stage materials and schedule deliveries during non-peak hours whenever possible to minimize disruptions to the traveling public. The DBT will separate construction from the traveling public and will provide proper well signed ingress, egress and refuge areas. We will also implement a Project Specific Work Zone Control Plan, similar to what Wagman Implemented on their I-95 RRC projects. On the I-95 RRC projects Wagman developed a Project Specific Work Zone Control Plan that identifies all ingress and egress to work zones. The DBT will provide this document to all team members: contractors, designers, VDOT, QA, QC, Subcontractors, and suppliers. This allows safe access to deliver materials and to build the project while protecting the traveling public. Staging and storage areas are strategically located to minimize construction traffic and deliveries disrupting traffic on I-64 or side streets. The DBT has logically separated the I-64 project into 6 geographic work areas as identified in the plan provided in section 4.6. The specific locations for storage, ingress and egress are shown on the MOT/SOC plans in Volume II.

Public Safety

Public safety is of utmost concern for WFJV on all projects, and will be addressed by carefully developing a sound Traffic Management Plan. The general public will be moved into clearly delineated paths and any pedestrian ramps that may be needed will meet all ADA requirements. Spotters and barricades will be posted in areas where pedestrians may come close to the work zones. Our certified Traffic Control Manger, David Creasy, in coordination with our Lead Traffic Engineer, Mitsuru Tanaka, PE, PTOE will ensure that temporary traffic control is set-up properly and remains in place per contract guidelines. We will also utilize our Public Outreach Plan (POP) to alert the general public of the upcoming changes in the area to limit the interruptions that they may face.

The DBT will coordinate with local stakeholders, including emergency responders, with respect to traffic impacts associated with construction of the I-64 Hampton Roads Express Lanes. In order to minimize disruptions to traffic, our approach will be to build as much of the interstate widening and streetscape as possible with minimal temporary lane closures or stoppages. We will coordinate clearance with utilities early to maximize available work space and minimize any safety concerns. Inlets, storm drains and other utilities will be constructed early, subject to time of year restrictions, in order to prepare for roadwork in future phases.

Table 4.5.1.4			
Description	Impact	Category	Team Mitigation Strategies
Emergency Response Access	Public safety during construction of the PROJECT	Construction Management	Maintain constant communication and partner with all emergency responders. Monthly progress updates utilizing PROJECT flyers and maps to define/identify changes to existing access points.
Maintenance of Traffic	Public safety and mobility during construction	Construction Management	Develop a comprehensive TMP to understand the existing traffic users, patterns and challenges. Carefully design geometrics/MOT and execute traffic control where existing I-64 switches from 3 lanes to 2 lanes, to continually maintain traffic.

To maximize safety and minimize disruption and delay to the traveling public, the project will be constructed in 3 major phases. These phases will include sub-stages as may be needed to maintain safe and efficient traffic movement. Signage and our POP will be instrumental in our Safety Management Plan to alert motorists, school bus drivers, public transportation providers, emergency service agencies, pedestrians, bicyclists, and the local communities in the project area, far in advance of construction work zones. Prior to all construction activities and scheduled maintenance of traffic that may affect the public (e.g., detours, traffic shifts, etc.), our Public Outreach staff will assist VDOT in providing a minimum of 30 days advanced notification to the Transportation Operations Center (VDOT TOC), local schools, and emergency services.

As with our Site Specific Environmental Health & Safety Plan, a key component will be the development and implementation of an Incident Management Plan. This plan will be incorporated into our Traffic Management Plan and will coincide with our Traffic Control Plans, as well as our Project Schedule and Construction Activity Plans. The Incident Management Plan will provide preventative measures and a step-by-step procedure to follow for any incident that occurs within the project site. This plan will establish guidelines for effective emergency response and communication procedures within the work area, so that appropriate actions can be taken without hesitation. A significant incident may include traffic accidents, fires, spills, work site accidents, natural disasters, damage to public utilities, or other emergencies that would pose a threat to personnel

or public safety. The DBT will establish a team of trained employees that will be led by our On-Site Project Safety Director, Andrew Weston, and our Project Superintendent, Jack Yon. This team will be responsible for the First Response, as well as further coordination with emergency operations, jobsite supervision, and the local jurisdictions to ensure safety to people and property. Any incident will be immediately presented to VDOT, as well as any other local jurisdiction that may require such notification, such as emergency service agencies, law enforcement, utility owners, and VDPOR. Notifications will be received, only as they pertain to the specific incident. A master list of local emergency responders will be established, maintained, and distributed to the project team for reference and use. Once the incident has been responded to, and all parties are safe and secure, an incident report will be documented and submitted to VDOT. These incident reports will be kept on file and reviewed as the project moves forward, to mitigate future occurrences of similar types.

Regard for the safety of the general public, our own employees and the employees of our subcontractors is a supreme responsibility at all levels of our organization. We intend to prevent all accidents, even minor ones, which could cause physical or mental pain. Prevention of injury and illness is a goal well worth achieving. A safe operation is organized, clean and efficient. If every employee views safety as their primary daily goal, we will be in a better position not only to avoid accidents but also to improve the overall performance of our company.

Public safety is of the utmost concern for the DBT on all projects and must be prominently accounted for on this Project as pedestrians and bicyclists use the secondary underpasses impacted by the multiple bridge rehabilitations and widenings, such as, S. Boxwood Ave., Settlers Landing Rd., E. Pembroke Ave., River Street, N. King St. and Rip Rap Rd. In order to maintain safe access for pedestrians during construction we will build as much of the utility, structural, street and roadside improvements as possible, while securely protecting and maintaining existing walkways and implementing the following features:

- Provide and/or maintain clearly delineated pedestrian paths and ramps that meet ADA requirements. This includes maintaining adequate walkway widths (4 foot minimum) and ramps (10:1 maximum slopes).
- Construct temporary ADA compliant pathways around or over work areas that affect existing walkways.
- When maintaining existing walkways within an active work area is not feasible, we will provide a clearly marked pedestrian detour route to the opposite side of the street.
- Post spotters and place barricades in areas where pedestrians may come close to the work zones.
- Maintain existing lighting levels throughout

construction to ensure properly lighted walkways are sustained.

- Maintain pedestrian signalization at existing marked crossings throughout construction.
- Maintain bike access via protected areas and detours as feasible.

Pedestrian and bicycle MOT details will be clearly developed in the Traffic Management Plan and Traffic Control Plans in accordance with VDOT standards.

Limiting Disruptions to Vehicular, Marine, and Railroad Traffic

The DBT has developed the Sequence of Construction with a focus on minimizing traffic impacts to the traveling public and all stakeholders throughout the construction of the project. The MOT plan developed by the DBT minimizes travel delays throughout all stages of construction and is explained in detail later in the document. The project area has one railroad track near Spring Road. However, the DBT does not anticipate any work near the tracks or any disruptions to the railroad. The DBT during construction will ensure that work in the Hampton River limits impacts to marine traffic. Currently Hampton River in the project area does not have large commercial shipping activities. The River channel is mostly used for recreational purposes. The DBT will work with the river users, VDOT, USCG, and related agencies to ensure impacts to river traffic are minimized and that a navigable channel under the bridges will remain open for the duration of construction. The DBT plans to eliminate stoppages for overhead demolition and construction activities by temporary relocating the navigation channel under the bridges, eliminating potential boating delays.

Installation of ITS for Monitoring Traffic and Safety

ITS Equipment / Devices

The DBT will install all ITS devices, including Dynamic Message toll lanes as per the RFP requirements. In addition, we will install manual warning gates, over height vehicle detectors, queue detection, and tolling infrastructure for the proposed toll gantry. Power and communications infrastructure for these devices will be designed and implemented separately for general purpose and toll lanes.

DMS | The RFP calls for two types of DMS. 1) General Purpose Dynamic Message Signs (GP-DMS) and Tolling Dynamic Message Signs (T-DMS). Both GP-DMS and T-DMS will be full matrix, full color LED, Type 2A and in accordance with VDOT Road and Bridge Specifications Section 804. DMSs for General Purpose Lanes (GP-DMS) and Tolling DMS (T-DMS) will be installed at their designated locations according to the approved plans and per RFP requirements. DMS will be installed after the structure's foundation and uprights are in place. To minimize the duration of road-closure, the sign will be attached to the truss while both assemblies are on the ground and then attached to the uprights.

Power and communications cables and conduits will be installed between the controller cabinet and sign housing. Both the sign housing and structure will be grounded according to the approved plans and NEC. The completed installation will be inspected and approved by the state designated electrical inspector.

CCTV Camera | CCTV will be installed to provide 100% overlapping coverage of both general purpose and toll lanes. Additional CCTV cameras for surveillance of toll gantries, and DMS will also be provided per RFP requirements. The CCTV cameras are pan, tilt, zoom (PTZ) and will be mounted on 60' poles with lowering assemblies. Power and communications cables will be routed to the camera unit from inside the pole. Air terminal and down-conductors will be installed and connected to the lightning protection grounding system per the approved plans. Camera housing and camera pole will be grounded per the approved plans and according to NEC. The completed installation will be inspected and approved by the state designated electrical inspector.

VDOT Microwave Vehicle Detection Sensors (V-MVDS) | All existing MVDS in the project limits will be replaced with new MVDS. Some of the MVDS are replaced on the existing poles and new poles will be installed at new locations or co-located with CCTV cameras. The V-MVDS will be configured to capture both general purpose and toll lanes and will be connected to VDOT ATMS Ring.

Toll Microwave Vehicle Detection Sensors (T-MVDS) | T-MVDS will be provided on new poles at every 0.5 mile in each direction as shown on the plans to capture toll lanes exclusively.

Warning Gates | All existing manual warning gates along I-64 EB Ramps within the project limits will be replaced with new gates. All gates will be manually operated.

Over Height Vehicle Detection (OHVD) System | The current design shows that the OHVD System is being designed and installed as part of the HRBT Project. Our team will coordinate and identify any impacts to the installed OHVD system and will replace the sensors as required per the RFP.

HOT Lane Infrastructure for Electronic Toll Collection (ETC) | The DBT will design, build, and implement the ETC system per the RFP. The physical infrastructure will include signing and vehicle sensors for dynamically calculating the tolls. We will coordinate with VDOT Tolling System Integrator (TSI), who will be responsible to design, integrate and test the tolling system for the project

- **Toll Gantry and Foundations:** The DBT will be responsible for designing the toll gantry, procure and install the toll gantry foundation and all gantry mounted conduits. The toll gantry will be designed per the RFP requirements stated in Section 2.9.9. The proposed toll gantry will be designed to accommodate all associated toll equipment to

include signing mentioned above.

- **VDOT's contractor TSI** will be responsible for the rest of the equipment that is required to be attached to the toll gantry, provide cabling between the gantry and the toll equipment cabinet (TEC) and uninterruptible power supply (UPS).
- **Generator Site:** We will provide the generator that will be connected to propane tank(s) to support the toll equipment for 24 hours. We will coordinate the location size, and design for the foundation. The generator site and the propane tank will be designed per RFP Section 2.9.11
- **Tolling Equipment Cabinet (TEC):** The TEC will be procured and installed by TSI and we will coordinate with TSI for the location and foundation for the Toll Equipment Cabinet (TEC). We will provide the foundation and design of TEC pad, conduits for power and fiber optic infrastructure for the TEC, splice fiber optic cables, and providing power to the TEC per RFP Section 2.9.10.

ITS Controls and Communications

Equipment Cabinets | Equipment Cabinets will be provided for all ITS devices. Separate Cabinets will be provided for VDOT ATMS in accordance with Tolling and Bridge Specifications Section 801 and VDOT Road and Bridge Standards CF-3 Foundations.

- **Fabrication:** Cabinets will be designed according to the approved plans for ground or pole mounted installation. Cabinets will be sized to accommodate all equipment as specified in the plans and specifications. The cabinets will be inspected for compliance upon arrival to the site and prior to installation.
- **Controller & Cabinet installation:** Cabinets will be installed on the ground or mounted to the structures according to the plans. For ground-mounted installations, the cabinets will be bolted to the foundation level and sealed around the base. Power and communications cables will be routed to the sign structure and housing through the conduit stub-out already in place within the foundation. Pole-mounted cabinets will be attached to the pole at the height shown on the plans. Power and communications cables and conduits will be routed to the sign housing exiting the bottom of the cabinet. Cabinets will be grounded according to the plans and NEC. The completed installation will be inspected and approved by the state designated electrical inspector.
- **Cabinet Foundation Installation:** For ground-mounted cabinet, the foundation will be built in approved locations and according to VDOT Road and Bridge Standard CF-3. Conduit stub-out will be placed for power and communications cables. Foundation will be leveled and stabled on the finished grade.

Communications Infrastructure and Design

| The DBT has conducted a preliminary field review to verify the concept plans and develop our communications design approach. Our design team has a complete understanding of the design requirements for this project. We are aware that the current VDOT Ethernet network consists of field hubs located throughout the region, connected via a fiber optic trunk line. Our design will be consistent with VDOT's current communication architecture. Our Team will meet with VDOT to identify, test, document, accept, and maintain assigned fibers that will be used exclusively for this project. We are aware that splicing will be required at several segments between existing cabinets in order to obtain a continuous fiber trunk line backbone. All cabinets will have UPS, controllers and TVSS in the nearest junction box to the equipment cabinet to maintain the ring structure.

- **Junction Boxes:** Junction boxes will be installed at the locations and spacing shown on the approved plans for fiber optic communications cable backbone, power cables, and device drop cables. Junction boxes material, size, and loading will comply with the approved plans and specifications.
- **Conduit trenching/boring:** Conduits will be installed according to the approved plans by either trenching, directional drilling, or attaching to the bridges. Conduit numbers, material, size, coupling, and transitioning in and out of junction boxes will comply with the plans and specifications. Conduits will be tested, cleaned, and capped after installation. Mule-tape and tracer wire will be installed as necessary for power and fiber optic conduits.
- **Cable/Fiber routing:** Fiber optic cables will be installed underground according to the approved routing plans and manufacturer's recommendations and VDOT 2020 Road and Bridge Specifications. The installation method will be discussed with the Engineer. Prior to installing the cable in an existing conduit, the conduit will be tested to ensure its integrity. Cables shall be identified and tagged appropriately as VDOT or tolling fiber.
- **Connection Termination:** At the locations shown in the plans, the cable will be spliced or terminated using pre-terminated patch panels. All splices will be contained in the splice enclosure.

Structure Fabrication | Sign structures will be fabricated per the approved designs. Compliance with the design plans and materials will be verified by the fabricator and the Contractor. Coordination will be made with the Department for an inspection of each structure assembly prior to installation.

Structure Installation | After verification and validation of the structures, they will be installed

at each site following VDOT Road and Bridge Standards.

- For new structures, a minimum vertical clearance of 19' will be maintained over all roadways and shoulders during and after construction. For structures being re-used, the existing minimum vertical clearances will be maintained.
- In general, the structures will be hot-dipped galvanized steel in accordance with VDOT and RFP Special Provisions.
- All base plates will have a minimum of six (6) 1 ½-inch diameter anchor bolts.
- Structure uprights will be bolted to the foundations prior to erecting and attachment of the truss and sign.

Structure Protection | When possible, the foundations for these structures will be placed outside of the clear zone or behind guardrail or concrete barriers, and/or behind the sound walls, in accordance with VDOT and RFP requirements. When mounted in the ground, they will be located behind the deflection zone of the guardrail or concrete barrier. The selection of guardrail vs. concrete barrier protection will be made to meet VDOT criteria for protection of obstructions within the clear zone.

Test bores | All structure location test bores will be completed to evaluate soil condition for the proposed structure design. The test bores will be performed for all overhead sign structures, CCTV Poles, and MVD Poles.

- **Foundation Design & Installation** | Typically, the foundations for overhead sign structures, gantries, and poles will consist of reinforced concrete caissons or spread footings, in accordance with VDOT Road and Bridge Standards. Where, structure foundations are to be installed in the median barriers, the barrier design will be modified to accommodate the installation of foundations.

ITS Integration and Testing

The DBT will develop project specific Integration and Testing plans as specified in the RFP. The Testing and Integration Procedures (TIP) will be developed for each device type such as DMS, CCTV, etc. and submitted for approval. The DBT team member Iteris has experience with VDOT and other state agencies throughout the nation in integration of ITS. The Iteris approach uses a combination of testing approaches to assure that new components operate properly as soon as they are placed into service in existing and enhanced settings. The testing process is progressive and comprehensive. Factory tests and first article tests are used to demonstrate that COTS components perform in keeping with the documentation of the vendor. Component tests performed in isolation are used to assure that developmental items meet the needs of the system. With COTS components

and developmental components demonstrated as acceptable, the testing process proceeds to an integrated test in a laboratory environment. Depending on the difficulty of establishing a realistic laboratory test setting, portions of the operational system may be used to support testing, while limiting risk to operational system performance degradation or visibility of testing artifacts to the public. As components are deployed, installation tests are executed to assure proper performance of each component in the field. The final phase of testing is an acceptance test with all components deployed in operational settings, again limiting the visibility and impact of testing to traffic operations. Following acceptance testing, a period of initial operations will be supported with enhanced monitoring and frequent interaction with customer management.

The test planning efforts first establish a framework of tests to be completed. The framework is followed by detailed plans and procedures for each step of the testing and initial operation process. All documents and plans are coordinated with customer management and engineering representatives prior to execution of the plans. Any defects or performance issues identified during integrated testing will cause a repetition of component or subsystem tests to isolate the issue for repair, followed by regression testing of subsequent steps to verify correction of the issue without introduction of unintended side effects.

ITS Operations Continuity

The DBT is committed to efficient completion of the Project while minimizing impacts to the traveling public and VDOT. Our schedule and sequence of construction has been designed to work with as little disruption as possible while bringing devices online as we progress to allow the benefit of early use of the installed devices. The ideas we specifically will address in this section include:

- Our team has completely examined the corridor and will install devices, such that they will provide maximum functionality while minimizing the need for lane closures during construction and for future maintenance.
- Any impacts to existing devices and infrastructure have been identified and temporary infrastructure will be provided to minimize the disruptions to the operations.
- We will coordinate project construction activities with VDOT staff to maximize continued operation of existing ITS components on I-64.

Coordination with HRBT Project

The DBT team understands the construction timeline for the adjacent HRBT Project (I-64 HREL Segment 1). The HRBT project limits overlap with Segment 4C Project. There are several ITS / Signing Structures and Equipment that will be installed as part Segment 1 within the Segment 4C project limits.

The following structures that are to be installed in Segment 1 conflict with the Segment 4C Project.

Overhead Span Structures | HRBT's approved for construction (AFC) plans show full span overhead sign structures at STA 760+50, STA 768+50, STA 777+17 (EB), and STA 1777+27 (WB) that will house multiple signs including some DMS / static signs shown on Segment 4C RFP plans. We will coordinate with Segment 1 to maintain these proposed overhead sign structures, where feasible and install the additional signs as shown on Segment 1 AFC plans during the construction along Segment 4C.

Segment 1 AFC plans proposed an EB sign structure that will house, overhead flashers, and several static signs that are in conflict with the proposed Toll Gantry and its associated equipment at STA 785+14. In addition, there is separate WB overhead sign structure that will house 2 static signs as shown on the Segment 1 AFC plans. Segment 4C will design and build a Toll Gantry to house the associated toll equipment as well as relocate the signs from the previously installed sign structures in Segment 1. We will coordinate with Segment 1 to relocate the proposed overhead signs and flashers as shown on the RFP plans.

Signs

Approved signs will be installed at their designated locations according to the approved plans. Signs will be installed after the structure's foundation and uprights are in place. To minimize the duration of road-closure, the sign will be attached to the truss while both assemblies are on the ground and then attached to the uprights.

Approved signs are installed in conjunction with or after completion of structure installation. Uprights or vertical support columns are bolted to the foundations. Signs are attached to the truss on the ground and then the truss is connected to the uprights. Once new signs are in place, decommissioned signs will be removed or covered until removal. Signs not put into immediate use will be covered. All installations and covering/uncovering are conducted in accordance with the MOT phasing plan.

In addition to monthly CPM updates, DBT best practices include preparing detailed 4 and 10-week look ahead schedules that will be shared with all adjacent projects. This allows for operational coordination among various projects and our simplified MOT scheme streamlines SWM and ESC coordination between adjacent projects.

4.5.2 Transportation Management Plan

The DBT is committed to minimizing traffic impacts to the traveling public and all stakeholders throughout the construction of the project. Our team has developed the Transportation Management Plan (TMP) and the Maintenance of Traffic (MOT) plans

with emphasis on maximizing safety for the traveling public and construction personnel while focusing on minimizing travel delays throughout all stages of construction. To accomplish these safety and public mobility goals, our team is committed to mitigation and communication strategies that exceed the requirements of the RFP. Some of these strategies are detailed on the following pages.

Our team understands that this project is classified as a Type C, Category V project in terms of the TMP. The TMP for this project will be developed per the VDOT IIM-LD-241/IIM-TE-351 and designed in accordance with the methodology provided in the Virginia Work Area Protection Manual; the Manual on Uniform Traffic Control Devices; and the Virginia Supplement to the Manual on Uniform Traffic Control Devices. **The TMP will be designed using a design speed matching the existing posted speed limit.** The TMP will include a Temporary Traffic Control Plan, a Public Communication Plan and a Transportation Operations Plan (TOP) in order to reduce multi-modal traffic impacts, improve safety, and enhance coordination within and around the work zones. The DBT will work with VDOT and emergency management personnel to ensure all emergency needs can be met in emergency or hurricane evacuation events. The DBT will develop renderings and visualization exhibits to facilitate public understanding of the concept. The DBT will implement a robust outreach and communication plan with the residents and other stakeholders and provide advance notices for all MOT phases and lanes shifts, closures, etc.

The proper planning of construction activities is critical in promoting worker and traveler safety as well as in preventing unreasonable travel delays and vehicular queues. Our personnel involved in the design and implementation of the work zones are experienced with this corridor and are certified with VDOT Advanced and Intermediate Work Zone Training.

DBT's cross-functional team of experts have interfaced to identify, support and lead all critical construction activities, including TTC zone and staging requirements. Our solution facilitates all MOT activities with minimal impact to the traveling public. For instance, our team will provide detailed plans including TTC design, acceleration/deceleration lanes, temporary pavement, temporary barrier walls and additional signage to safely guide construction equipment and material deliveries in and out of the work zone areas. Temporary drainage will be constructed to safeguard travel lanes from water ponding during storms. Significant advantages of our MOT plan is that it provides an alternative solution to detour/diversion and reduces project delivery timeline, supports seamless integration of lanes, offers separation between opposing traffic for safety, minimal construction phases, offers direction on how

traffic will be systematically diverged from point of interest before it causes bottleneck, meets or exceeds VDOT requirements, and requires minimal effort by the traveling public.

4.5.2.1 Maintenance of Traffic through All Phases of Construction

The MOT scheme developed by the DBT minimizes impacts on public and stakeholders, minimizes congestion while significantly improves safety of the traveling public and construction personnel by completely separating the traveling public from the construction area. **The DBT has already performed the preliminary VISSIM analysis of all MOT phases which shows acceptable LOS and corridor travel times** The DBT will run additional microsimulations during final design of all MOT schemes to support our Type C TMP. The MOT scheme has been optimized to minimize impact on the mainline I-64, interchanges, and adjacent roadways. The MOT allows the interchanges to be kept open and minimizes the need for any detours. It improves traffic operations, corridor mobility, and safety by providing consistent traffic patterns and eliminates implementation of multiple lane shifts and MOT phases that can cause traffic delays, safety issues, and driver confusion. It provides a large continuous construction area which improves safety for the traveling public and the work force, permits the staging of equipment and materials, and expedites the construction schedule. It facilitates inside and outside widening of the roadway and bridges and allows the substructure work for both EB and WB Hampton River Bridge to be conducted efficiently. In addition, it eliminates/reduces the need for temporary work bridges on Hampton River.

Another important element is coordination with adjacent construction projects including HRBT, HREL Segment 4A/4B, HREL Segment 1A, North King Street Section 4 and Replace Delaminated OH sign panels. Based on these important considerations, to complete the construction of this project in a safe and efficient manner, our team has developed three major MOT phases.

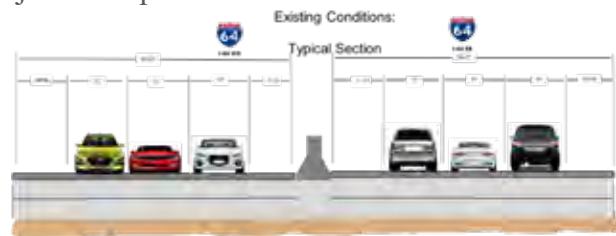


Figure 4.5.2.1: Existing Conditions

This allows work to be constructed along the entire 2 ½ mile corridor. The three major MOT phases are:

- 1. Phase 1:** Move All Traffic on I-64 EB / Reconstruct WB I-64
- 2. Phase 2:** Move All Traffic on I-64 WB /

Reconstruct EB I-64

3. Phase 3: Reconstruct Median Barrier I-64

Phase 1

Phase 1 consists of three sub phases: Phase 1A, 1B, & 1C. Phase 1A will include the preparation work and includes upgrade of the outside shoulders of I-64 EB utilizing milling and paving by using temporary lane closures during the allowable lane closure hours.

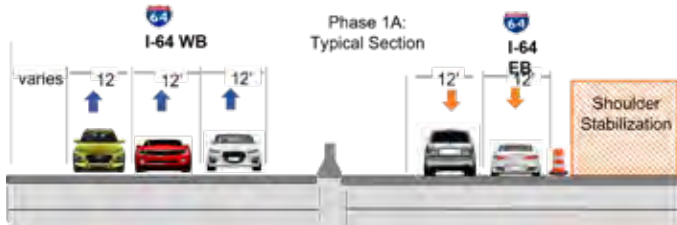


Figure 4.5.2.2: MOT Phase 1A

Phase 1B will make the traffic to two lanes in each direction on I-64 mainline to allow the removal of the median barrier, construction of crossovers, and temporary reconstruction of the median to support the lane widths.

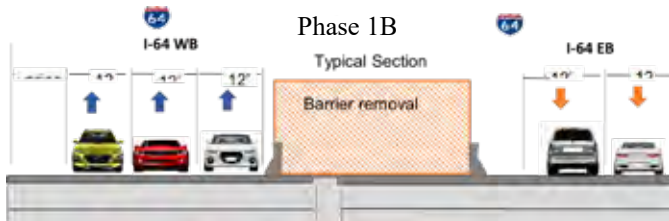


Figure 4.5.2.3: MOT Phase 1B

In Phase 1C will include shifting all traffic (both EB and WB) on the EB Roadway and bridges. This will be accomplished by providing a consistent roadway cross section on mainline I-64 through the project area with Two lanes in WB Direction and Two lanes in EB Direction on I-64 mainline. To implement this phase, the 2 WB Lanes exiting the HRBT will be continued west and the third lane that starts west of Mallory Street Interchange will be closed so that a consistent 2 lane WB section continues west. Right lane on EB mainline I-64, approximately 0.2 miles east of LaSalle Ave will be closed to maintain 2 lanes in EB direction on I-64. Traffic will be shifted from WB lanes to the EB side and the WB I-64 roadway and bridges between Settlers Landing and LaSalle Ave Interchange will be closed. All entrance and exit ramps to Settlers Landing/Rt 60, LaSalle Ave and Rip Rap Rd will be kept open. Emergency pull-off areas will be provided if 9' shoulders are not available within a 1-mile corridor of the channelization. Once all traffic (both WB and EB) has been shifted on EB Roadway and Bridges, the closed section of the WB I-64 roadway and bridges will be widen/reconstructed.

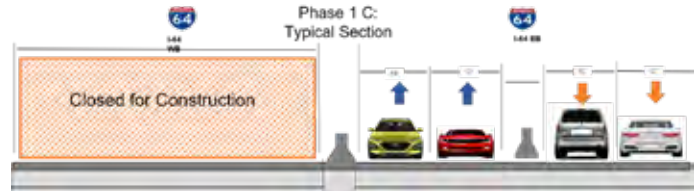


Figure 4.5.2.4: MOT Phase 1C

Phase 2

Phase 2 includes two subphases: Phase 2A & 2B. Phase 2A will split traffic to accommodate two lanes of traffic for both directions to allow the reconstruction of the crossovers and repositioning of temporary median barrier as required. Once the crossovers are completed all lanes of traffic will be to I-64 WB of the channelization. Once all traffic (both WB and EB) has been shifted to WB Roadway and Bridges, the closed section of the EB I-64 roadway and bridges will be widened/reconstructed including the demolition/reconstruction of the EB Hampton River Bridge.



Figure 4.5.2.5: MOT Phase 2A

Phase 2B begins once crossovers are completed. All traffic lanes (both EB & WB) will be shifted I-64 WB. This phase will also provide a consistent roadway cross section on mainline I-64 through the project area with Two lanes in WB Direction and Two lanes in EB Direction on I-64 mainline. Once all traffic has been shifted to the new constructed WB side, the East side roadway and bridges will be closed between LaSalle Ave Interchange and Settlers Landing Interchange. All entrance and exit ramps to Settlers Landing/Rt 60, LaSalle Ave and Rip Rap Rd will be kept open. Emergency pull-off areas will be provided if 9' shoulders are not available within a 1-mile corridor of the channelization. Once all traffic (both WB and EB) has been shifted on WB Roadway and Bridges, the closed section of the EB I-64 roadway and bridges will be widen/reconstructed including the demolition/reconstruction of the EB Hampton River Bridges.

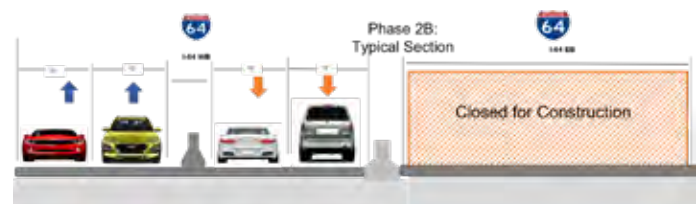


Figure 4.5.2.6: MOT Phase 2B

Phase 3

Phase 3 will consist of two phases: Phase 3A and Phase 3B. Phase 3A will begin after the completion of Phase 2 which included reconstruction of EB roadway and bridges. In Phase 3A, EB I-64 traffic will be moved back to the newly reconstructed EB side. Phase 3A, will also provide a consistent roadway cross section on mainline I-64 through the project area with Two lanes in WB Direction and Two lanes in EB Direction on I-64 mainline, such that these lanes are provided on the outside section of the mainline while keeping the center section (inside shoulder and two inside lanes) closed for construction of lane shift/transition areas, the permanent concrete barriers, ITS, and other remaining work in the center section of I-64.

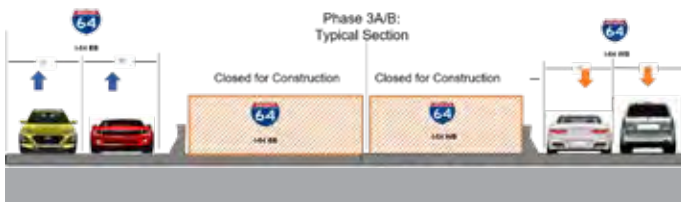


Figure 4.5.2.7: MOT Phase 3A/B

Phase 3B will start after the completion of Phase 3A. In Phase 3B, will begin once the median work is completed. After the median work is done, in Phase 3B final construction activities will take place including milling, overlay, pavement markings and roadway finishes to open traffic on I-64 EB & WB with the new toll lanes.



Figure 4.5.2.8: Final Condition Post Construction (East of King street)

Completion of Phase 3B, will mark the end of the MOT and completion of construction after which the traffic can be transition to the final required configuration as prescribed in the RFP with shoulders, Express Lane(s), and General-Purpose lanes.

Proposed Lane and Ramp Closures

Lanes closures will follow the requirements of the RFP in particular Section 2.10.3 “Lane and Road Closure Restrictions”. The MOT scheme developed by the DBT requires closure of one EB lane and one WB lane on mainline I-64, such that there are two lanes in EB and 2 lanes in WB direction between LaSalle Ave Interchange and Mallory Street Interchange. To implement the MOT, the

2 WB Lanes exiting the HRBT will be continued west and the third lane that starts west of Mallory Street Interchange will be closed so that a consistent 2 lane WB section continues west. Right lane on EB mainline I-64, approximately 0.2 miles east of LaSalle Ave will be closed to maintain 2 lanes in EB direction on I-64. Traffic will be shifted from WB lanes to the EB side and the WB I-64 roadway and bridges between Settlers Landing and LaSalle Ave Interchange will be closed. This lane closure will be throughout the length of the construction. The MOT does not propose any long-term ramp closures. Temporary lane closures on ramps will be needed during ramp reconstruction, however, these closures will be in accordance with the requirements of the RFP and will not be for an extended period.

Temporary Detours

The DBT has developed the MOT and the construction access to diminish impacts to the traveling public, local community, and other stakeholders. Construction will be staged in order to maintain safe passage through the work zone. At this time, no long-term detours are expected. The reconstruction/widening of the mainline bridges over Riprap Road, King Street, Settlers Landing, River Road, and Pembroke Ave may require temporary detours on these streets. However, these will be short term and there are no closures anticipated except for short-term flagging operations. Detour routes will be addressed in a contingency plan should any unforeseen conditions present themselves within the work zone. The DBT will continue to foster a close relationship with key stakeholders. Courtesy alternative route directions to maintain traffic and regard traveling public’s concerns/ preferences will be provided.

In addition, any necessary river closures will be closely coordinated in advance with VDOT, USCG, USACE, and river users.

Time-of-Day Restrictions

The Team will adhere to the RFP requirements for the time of the day restrictions for allowable lane and shoulder stabilization. The expansion activities for I-64 EB and WB Hampton River bridges will have no restriction of work hours after closure. The closure activities will also abide by the RFP time restrictions. This will be included in the Public Communication and Incident Management Plan along with updates to VDOT’s Regional Traffic Operations Center.

Limiting Disruptions to Vehicular, Marine, and Railroad Traffic

The DBT has developed the Sequence of Construction with focus on minimizing traffic impacts to the traveling public and all stakeholders throughout the construction of the project. The MOT plan developed by the DBT minimizes travel delays throughout all stages of construction and is explained in detail later in the document. The project area has

one railroad track near Spring Road. However, the DBT does not anticipate any work near the tracks or any disruptions to the railroad. The DBT during construction will ensure that work in the Hampton River limits impacts to marine traffic. Currently Hampton River in the project area does not have large commercial shipping activities. The River channel is mostly used for recreational purposes. The DBT will work with the river users, VDOT, USCG, and related agencies to ensure impacts to river traffic are minimized. The DBT plans to eliminate marine traffic stoppages for overhead demolition and construction activities by temporary relocating the navigation channel under the bridges, eliminating potential boating delays.

Flagging Operations

The DBT will employ flagging operations at all locations as needed. Flagmen will be used when any construction traffic or adjacent/overhead work could pose a potential safety hazard on the project and to the traveling public. Any construction activities and temporary detours on Riprap Road, King Street, Settlers Landing, River Road, and Pembroke Ave will be accompanied by flagging operations.

Minimum Lane Widths

The DBT's MOT Plan adapts the RFP lane requirements and provides 12-foot-wide travel lanes on mainline I-64 as required by the RFP during construction. Lane width and separation requirement is achieved by stabilizing the shoulder on I-64 EB.

Work Zone Speed Restrictions

The TMP will be designed using a design speed matching the existing posted speed limit per the requirements of the RFP Section 2.10 "Transportation Management Plan". [Our TMP and MOT plans do not require any work zone speed reductions. All temporary lane shifts and mergers will be designed for the full posted speed limit and all temporary geometry and shifts will meet the standards for full posted speeds.](#)

Construction Entrances

The MOT plan developed by the DBT allows the construction entrances to be placed in areas that maximize the safety of the traveling public and construction workers. The construction ingress and egress points are strategically placed within the project limits prioritizing safety and operations. [Our enhanced MOT scheme provides construction vehicle access to the work zones at the project termini with appropriate zones for deceleration and acceleration within the closed roadway section instead of using temporary mainline I-64 lane closures to create these zones.](#)

All access points will be marked for easy identification and include advance warning notification and acceleration/deceleration areas with positive protection barrier so that construction

traffic has the least amount of impact to the traveling public. The access points are identified graphically on our MOT plans in Volume II.

Public Communication during TMP

The Public Communication Plan (PCP) will be another major component of the TMP developed by the DBT. Our team believes that a comprehensive public outreach plan is needed for the success of this project that can provide timely, accurate, and reliable information to all the users and stakeholders. The PCP for the TMP will also be included in the overall Communication Plan for the project. The communication plan will be developed with focus of ensuring that timely information dissemination to all users, stakeholders, emergency response personnel throughout the project. For example, [before each MOT phase is implemented, drive thru simulations \(Video Graphic Models\) will be developed and given to VDOT's Public Outreach Team for public information.](#) The plan will include details regarding the level of information, type of information, frequency, method, and recipients of the information. [Various communication methods including video-3D modeling, newsletters, project brochures, websites, social media, press releases, and media campaigns may be used to communicate information to the public including new traffic patterns, traffic shifts, detours, alternative routes, travel times and delays, and project schedule.](#) All of these tools will be made available to VDOT's Office of Communications and distributed as requested. The DBT will ensure all communications especially media campaigns and press releases receive VDOT's approval.

The main elements of the of the public communication plan will be:

- Virginia 511 Notifications
- Use of Virginia State Police
- Portable Changeable Message Signs
- Target Audiences and Key Stakeholders
- Communication Partners
- Crisis Communications/Risk Management Plan

In order to provide consistent and predictable information, the DBT will prepare and provide 4 and 10-week look ahead schedules to supplement our CPM updates. The communication team will coordinate regularly The communication team will coordinate regularly with the homeowner associations, individual homeowners, civic associations, businesses, state and local agencies, utility providers, federal agencies, and other stakeholders during both design and construction. The DBT will host Pardon our Dust and related public meetings on behalf of VDOT.

4.6

Proposal Schedule



The Design-Build Team (DBT) has provided a Proposal Schedule and Proposal Narrative demonstrating our understanding of the complexities and interrelationships of the technical elements of the Project. We will improve the delivery of the project by achieving the interim milestone and final completion dates earlier than required. For additional benefit we offer a unique milestone associated with removal of all temporary construction works in the Hampton River by February 28, 2026. PDF copies of the Proposal Schedule and narrative as well as a back-up copy of the Proposal Schedule's source document has been provided in XER format.

4.6.1 Project Schedule

The DBT has developed a Proposal Schedule (located in Volume II), which incorporates the internal plan reviews, VDOT plan reviews and approvals, environmental permitting and constraints, right of way acquisition, utility relocation, required submittals to include shop drawings, construction activities and QA/QC inspection and testing. RFP Section 2.3.1 provides Interim and Final Completion Milestones. **Our Interim Milestone Date of 6/10/2026 beats the RFP requirement of July 2, 2026 by twenty two days. Our Final Completion Date of 12/10/2026 beats the RFP requirement of 12/30/2026 by twenty days.** Additionally as a benefit to the users of the Hampton River, we commit to a Unique Milestone to remove all temporary construction works from the Hampton River by February 28, 2026. In addition to the accelerated delivery, the DBT is providing several schedule related enhancements as summarized with their specific benefits on Table 4.6 provided on the next page and identified throughout this section by blue font.

The Proposal Schedule depicts the DBT's proposed overall sequence of work and duration for each work task and deliverables required to complete the Project. The schedule is organized using a hierarchical Work Breakdown Structure (WBS), divided into six major segments of the Project as indicated in the below figure.



Figure 4.6.1.1: DBT and VDOT “what if” scenarios during Monthly Progress I-95 RRC Progress Meeting



Figure 4.6.1.2: Six major segments of the Project

4.6 Schedule Enhancements

Benefits & Enhancements	Safety For The Traveling Public, Construction Operations And The Environment	Operations And Coordination With Adjacent Projects	Schedule	Constructability With Focus On Constrained Work Zones In An Urban And Marine Environment	Outreach, Stakeholders and Public Acceptance	Future Inspection, Maintenance And Asset Performance	Cost	
	Milestones	Optimized sequence of construction will enable the DBT to deliver the project by 12/10/2026, twenty days earlier than the Final Completion required in the RFP	✓	✓	✓	✓	✓	✓
		Optimized sequence of construction will enable the DBT to achieve the interim milestone by 6/10/2026, twenty two days earlier than the dates required in the RFP	✓	✓	✓	✓	✓	✓
		The horizontal alignment shift at B-673 I-64 EBL will allow expedited installation and removal of temporary works in the Hampton River enabling the DBT to provide the unique milestone of having all temporary construction works removed from the river by February 28, 2026.	✓	✓	✓	✓	✓	✓
	Risk Allocation	There are no VDOT activities on the critical path.		✓	✓	✓	✓	
		During our monthly progress meetings with VDOT, the DBT will provide monitor screens to view our CPM in real time instead of just reviewing static PDF or printed hard copies. This lets the Project team run real time “what if” scenarios to see the effect on critical path or other key dates.	✓	✓	✓	✓	✓	✓
Scope Validation	During the RFP phase the DBT has already developed a preliminary geotechnical investigation plan that identified any gaps in available data so that additional borings and analysis can be completed within the 120 day scope validation period.	✓	✓	✓	✓	✓		
Limited NTP for Design	The Construction Joint Venture of Wagman-Fay SE is assuming risk by issuing a Limited Notice to Proceed (LNTP) to the Lead Designer, EXP. upon receipt of VDOT’s Notice of Intent to Award. The LNTP authorizes EXP to begin key design and permitting activities.	✓	✓	✓	✓	✓		
Public Involvement	In addition to the community and public information meetings required by the RFP, the DBT will host meetings prior to the implementation of each major traffic phase. The DBT will develop drive thru simulations (Video Graphic Models) and provide to VDOT for appropriate use.		✓	✓	✓	✓	✓	
Environmental	The CPM identifies and accounts for all environmental commitments, TOYR, and permit conditions/requirements.		✓	✓	✓	✓	✓	
	Our sequence of construction does not require any dredging minimizing environmental impacts and time frames to obtain permit approvals.	✓	✓	✓	✓	✓	✓	
SWM	Underdrains will be inspected by a third party not involved in design or construction. Inspections will be performed, reviewed, and provided to VDOT after intermediate asphalt is complete and prior to transitioning to subsequent MOT phases. Our QA/QC Plan and CPM identify these inspection activities eliminating out of phase rework.	✓	✓	✓	✓	✓	✓	
Right of Way	In addition to including the appropriate ROW activities and hold points in the CPM, the DBT has coordinated with construction in locations such as B-674 east abutment in the vicinity of the golf course to minimize Right of Way impacts.	✓	✓	✓	✓	✓		
Utilities	The CPM has been developed with no utilities on the critical path.		✓	✓	✓	✓		
	DBT will develop and share 3D Models and visualizations with the utility owners to ensure conformance and compatibility between P&Es, our plans and construction. DBT will inspect as built (using geospatial survey equipment) all utility relocations as they are being performed within the project limits to ensure they are in conformance with the P&E and allowable tolerances and the work is performed correctly the first time eliminating timely or out of phase rework.	✓	✓	✓	✓	✓	✓	✓
Construction Approach	The DBT will hold bi-monthly meetings with all utility owners to review status of P&Es and update our CPM accordingly.	✓	✓	✓	✓	✓		
	Our MOT phasing requires only 3 major phases and the traveling public will be completely separated from construction areas providing contiguous areas of existing I-64 for staging and more efficient construction the full length of the project.	✓	✓	✓	✓	✓	✓	
Coordination	DBT has local resources including active marine operations that are experienced in the safe & efficient construction of projects of similar scope and complexity. DBT has the ability to self perform all activities of work that are critical to control schedule, or recover schedules negatively impacted by others. Over the last 40 years, we have developed relationships with local subcontractors and vendors that will supplement our internal crews to maintain the project schedule.	✓	✓	✓	✓	✓		
	In addition to monthly CPM updates, DBT will include detailed 4 and 10-week look ahead schedules that will be shared with adjacent projects. This enhances operational coordination among projects and provides accurate & predictable information for use in public outreach.	✓	✓	✓	✓	✓	✓	

4.6.2 Project Schedule Narrative

In addition to the technical elements, this narrative also describes the DBT’s plan to accomplish the work including, but not limited to, the overall sequencing, a description and explanation of the Critical Path, proposed means and methods, and other key elements upon which the Proposal Schedule is based.

Schedule Development

The DBT has reviewed in detail the scope and schedule requirements outlined in the RFP and has developed a Proposal Schedule outlining our plan to successfully manage all phases of the I-64 Segment 4C Project and build upon our existing partnerships with VDOT and other stakeholders to safely deliver the project in an expedited manner. **The Proposal Schedule does not include any VDOT activities on the critical path.**

Project Milestones	
Notice of Intent to Award	6/24/2022
Notice to Proceed	8/1/2022
Begin Physical Work	1/3/2023
Start Work on B-674	8/21/2023
Start Work on B-673	11/15/24
Remove Temporary Construction Works from River	2/28/26
Achieve Interim Milestone	6/10/2026
Final Project Completion	12/10/2026

Work Breakdown Structure

The DBT has organized the schedule into a hierarchical Work Breakdown Structure (WBS) to demonstrate the relationship and activity durations amongst the milestones, scope validation period, design, public involvement, environmental permitting, ROW acquisition, utility relocation, construction, and project management disciplines for the I-64 HREL Segment 4C Project. The following is a summary of our schedule organization followed by the complete WBS listing in Table 4.6.1.

Project Milestones: This section provides for quick review of project milestones and overall status.

QA/QC Plan: This section contains QA/QC Milestones.

Design: Includes preliminary engineering services, plan development, QA/QC reviews, submittal milestones, internal reviews, VDOT plan reviews and approvals, other regulatory agency reviews.

Environmental: This section includes hazardous material plan development and inspections, threatened or endangered species surveys and relocations, permit development and acquisition, noise abatement and VDHR reviews.

Right-of-Way: This section includes all work necessary to obtain the ROW required by the DBT’s design including limited access modifications, hold points, appraisals, reviews, negotiations and clearing of ROW. As we prepare our Baseline CPM we may further break down the project ROW into packages to facilitate prioritization and tracking of critical parcels.

Utilities: This section contains all Utility designations, coordination, design, relocation, and as-builts anticipated by the DBT’s design and **the Proposal Schedule has been developed with no utilities on the critical path.** As we develop our Baseline CPM we will further refine our utility relocation requirements to ensure and track priority relocations.

Public Involvement: This section includes the public outreach plan, updates and meetings. This section will be further refined as we develop and update the Baseline CPM during the course of the project.

Construction: Includes all components of roadway and bridge construction as well as MOT, construction access, noise barriers, and drainage. This section is further broken down to show the DBT’s logical progress of work.

Table 4.6.1 Work Breakdown Structure








WBS Code	WBS Name	11 May 22 13:24
22H002 BID V7	022H002 VDOT 1-64 SEGMENT 4C BID SCHEDULE V7	
22H002 BID V7 ADMIN	##### CONTRACT ADMINISTRATION #####	
22H002 BID V7 EXEC	##### EXECUTIVE SUMMARY & MEETINGS #####	
22H002 BID V7 EXEC TFW	----- TOTAL PHYSICAL WORK DURATION -----	
22H002 BID V7 EXEC 1	----- PHASE 1A -----	
22H002 BID V7 EXEC 2	----- PHASE 1B -----	
22H002 BID V7 EXEC 3	----- PHASE 1C -----	
22H002 BID V7 EXEC 4	----- PHASE 2A -----	
22H002 BID V7 EXEC 5	----- PHASE 2B -----	
22H002 BID V7 EXEC 6	----- PHASE 3A -----	
22H002 BID V7 EXEC 7	----- PHASE 3B -----	
22H002 BID V7 ENGR	##### DESIGN/ENGINEERING SUBMITTALS/REVIEW #####	
22H002 BID V7 ENGR 1	----- CAQCC DESIGN PLAN -----	
22H002 BID V7 ENGR 2	----- SCOPIC VALIDATION -----	
22H002 BID V7 ENGR 3	----- EXISTING DRAINAGE SYSTEM -----	
22H002 BID V7 ENGR 4	----- DESIGN EXCEPTIONS AND DESIGN WAIVERS -----	
22H002 BID V7 ENGR 5	----- FIELD SURVEY & MOBILE SCANNING -----	
22H002 BID V7 ENGR 6	----- GEOTECHNICAL & SUBSURFACE ENGINEERING -----	
22H002 BID V7 ENGR 7	----- ROADWAY DESIGN -----	
22H002 BID V7 ENGR 7.9	Roadway Design - Early Work Packages (EWP) Clearing, Grading, EAS, MOT & TMF	
22H002 BID V7 ENGR 7.8	Roadway Design - ROW Plans	
22H002 BID V7 ENGR 7.10	Roadway Design - Remainder of Work Package (R/WP), Review/Design/SWP/Plans/EAS/Sign/Marking	
22H002 BID V7 ENGR 11	----- STRUCTURE DESIGN -----	
22H002 BID V7 ENGR 11.1.3	B-677 Over Street Pedestrian Underpass	
22H002 BID V7 ENGR 11.1.2	Bridge B-659 EBL/WBL over Riprap Rd	
22H002 BID V7 ENGR 11.1.4	C-644 Trestle RCP Bridge Creek	
22H002 BID V7 ENGR 11.1.5	Bridge B-672 1-64 WBL EBL over King St	
22H002 BID V7 ENGR 11.1.6	Bridge B-675 1-64 EBL/WBL over Settlers Landing Rd	
22H002 BID V7 ENGR 11.1.7	Bridge B-674 1-64 WBL over Hampton River	
22H002 BID V7 ENGR 11.1.8	Bridge B-673 1-64 EBL over Hampton River	
22H002 BID V7 ENGR 11.1.9	W/L Retaining Wall	
22H002 BID V7 ENGR 11.1.20	W/L Ground Mounted Sound Wall	
22H002 BID V7 ENGR 11.21	EBL Retaining Wall	
22H002 BID V7 ENGR 11.22	EBL Ground Mounted Sound Wall	
22H002 BID V7 ENGR 23	----- ENVIRONMENTAL -----	
22H002 BID V7 ENGR 23.25	----- Hazardous Materials -----	
22H002 BID V7 ENGR 23.26	----- Noise Assessment -----	
22H002 BID V7 ENGR 26	----- PERMITS -----	
22H002 BID V7 ENGR 26.26	US Army Corps of Engineers (USACE)	
22H002 BID V7 ENGR 26.27	Joint Permit Application (JPA)	
22H002 BID V7 ENGR 26.28	Virginia Department of Environmental Quality (DEQ)	
22H002 BID V7 ENGR 26.30	Virginia Marine Resources Commission (VMRC)	
22H002 BID V7 ENGR 26.31	US Coast Guard	
22H002 BID V7 ENGR 6	----- PROJECT SUBMITTALS -----	
22H002 BID V7 MATR	##### MATERIALS FABRICATION & PROCUREMENT #####	
22H002 BID V7 E&S	##### E&S CONTROLS/ENVIRONMENTAL COMMITMENT WORK #####	
22H002 BID V7 I	##### UTILITIES #####	
22H002 BID V7 CONST	##### CONSTRUCTION #####	
22H002 BID V7 CONST SITE	----- PREPARATORY/SITEWIDE WORK -----	
22H002 BID V7 CONST 3	----- ROADWAY -----	
22H002 BID V7 CONST 3.7	----- ENTIRE PROJECT (MOT PHASING) -----	
22H002 BID V7 CONST 3.7.1	----- PHASE 1A MOT SETUP WORK -----	
22H002 BID V7 CONST 3.7.2	----- PHASE 1B MOT SETUP WORK -----	
22H002 BID V7 CONST 3.7.3	----- PHASE 1C MOT SETUP WORK -----	
22H002 BID V7 CONST 3.7.4	----- PHASE 2A MOT SETUP WORK -----	
22H002 BID V7 CONST 3.7.5	----- PHASE 3 MOT SETUP WORK -----	
22H002 BID V7 CONST 3.1	----- AREA 1 - N. ARMSTEAD AVE. TO RIP RAP RD. -----	
22H002 BID V7 CONST 3.1.1	----- EBL -----	
22H002 BID V7 CONST 3.1.2	----- WBL -----	
22H002 BID V7 CONST 3.2	----- AREA 2 - RIP RAP RD. TO KING ST. -----	
22H002 BID V7 CONST 3.2.1	----- EBL -----	
22H002 BID V7 CONST 3.2.2	----- WBL -----	
22H002 BID V7 CONST 3.3	----- AREA 3 - KING ST TO RIVER ST. -----	
22H002 BID V7 CONST 3.3.1	----- EBL -----	
22H002 BID V7 CONST 3.3.2	----- WBL -----	
22H002 BID V7 CONST 3.4	----- AREA 4 - B-673 ABUT 01 TO HOWOOD ST. -----	
22H002 BID V7 CONST 3.4.1	----- EBL -----	
22H002 BID V7 CONST 3.4.2	----- WBL -----	
22H002 BID V7 CONST 3.5	----- AREA 5 - B-673 ABUT 02 TO SETTLERS LANDING RD. -----	
22H002 BID V7 CONST 3.5.1	----- EBL -----	
22H002 BID V7 CONST 3.5.2	----- WBL -----	
22H002 BID V7 CONST 3.6	----- AREA 6 - SETTLERS LANDING RD. TO MALLORY ST. -----	
22H002 BID V7 CONST 3.6.1	----- EBL -----	
22H002 BID V7 CONST 3.6.2	----- WBL -----	
22H002 BID V7 CONST 3.10	----- RIVER ST PARK -----	
22H002 BID V7 CONST 4	----- STRUCTURES -----	
22H002 BID V7 CONST 4.1	----- B-659 / BRIDGE OVER RIP RAP RD. -----	
22H002 BID V7 CONST 4.1.1	----- EASTBOUND -----	
22H002 BID V7 CONST 4.1.1.1	----- ABUTMENT A -----	
22H002 BID V7 CONST 4.1.1.2	----- ABUTMENT B -----	
22H002 BID V7 CONST 4.1.1.3	----- SPAN A -----	
22H002 BID V7 CONST 4.1.1.4	----- SPAN B -----	
22H002 BID V7 CONST 4.1.1.5	----- SPAN C -----	
22H002 BID V7 CONST 4.1.1.6	----- ALL SPANS -----	
22H002 BID V7 CONST 4.1.1.2	----- WESTBOUND -----	
22H002 BID V7 CONST 4.1.2	----- ABUTMENT A -----	
22H002 BID V7 CONST 4.1.2.1	----- ABUTMENT B -----	
22H002 BID V7 CONST 4.1.2.2	----- SPAN A -----	
22H002 BID V7 CONST 4.1.2.3	----- SPAN B -----	
22H002 BID V7 CONST 4.1.2.4	----- SPAN C -----	
22H002 BID V7 CONST 4.1.2.5	----- ALL SPANS -----	
22H002 BID V7 CONST 4.1.2.6	----- ALL SPANS -----	
22H002 BID V7 CONST 4.2	----- B-672 / BRIDGE OVER KING ST. -----	
22H002 BID V7 CONST 4.2.1	----- EASTBOUND -----	
22H002 BID V7 CONST 4.2.1.1	----- ABUTMENT A -----	
22H002 BID V7 CONST 4.2.1.2	----- PIER 1 -----	
22H002 BID V7 CONST 4.2.1.3	----- PIER 2 -----	
22H002 BID V7 CONST 4.2.1.4	----- ABUTMENT B -----	
22H002 BID V7 CONST 4.2.1.7	----- SPAN A -----	
22H002 BID V7 CONST 4.2.1.8	----- SPAN B -----	
22H002 BID V7 CONST 4.2.1.9	----- SPAN C -----	
22H002 BID V7 CONST 4.2.1.5	----- ALL SPANS -----	
22H002 BID V7 CONST 4.2.2	----- WESTBOUND -----	

WBS Code	WBS Name	11-May-22 13:24
22H002.BID.V7.CONST4.2.2.1	ABUTMENT A	
22H002.BID.V7.CONST4.2.2.2	PIER 1	
22H002.BID.V7.CONST4.2.2.3	PIER 2	
22H002.BID.V7.CONST4.2.2.4	ABUTMENT B	
22H002.BID.V7.CONST4.2.2.7	SPAN A	
22H002.BID.V7.CONST4.2.2.8	SPAN B	
22H002.BID.V7.CONST4.2.2.6	SPAN C	
22H002.BID.V7.CONST4.2.2.8	ALL SPANS	
22H002.BID.V7.CONST4.3	**** B473 / EASTBOUND BRIDGE OVER HAMPTON RIVER ****	
22H002.BID.V7.CONST4.3.1	**** EXISTING B-617 (OVER HAMPTON RIVER) SUBSTRUCTURE ****	
22H002.BID.V7.CONST4.3.2	**** EXISTING B-617 (OVER HAMPTON RIVER) SUPERSTRUCTURE ****	
22H002.BID.V7.CONST4.3.5	**** EXISTING B-618 (OVER BOXWOOD ST) SUBSTRUCTURE ****	
22H002.BID.V7.CONST4.3.6	**** EXISTING B-618 (OVER BOXWOOD ST) SUPERSTRUCTURE ****	
22H002.BID.V7.CONST4.3.5	**** NEW SUBSTRUCTURE ****	
22H002.BID.V7.CONST4.3.3.1	ABUTMENT A1	
22H002.BID.V7.CONST4.3.3.2	BENT 1	
22H002.BID.V7.CONST4.3.3.3	BENT 2	
22H002.BID.V7.CONST4.3.3.4	BENT 3	
22H002.BID.V7.CONST4.3.3.5	BENT 4	
22H002.BID.V7.CONST4.3.3.6	BENT 5	
22H002.BID.V7.CONST4.3.3.7	BENT 6	
22H002.BID.V7.CONST4.3.3.8	BENT 7	
22H002.BID.V7.CONST4.3.3.9	BENT 8	
22H002.BID.V7.CONST4.3.3.10	BENT 9	
22H002.BID.V7.CONST4.3.3.11	BENT 10	
22H002.BID.V7.CONST4.3.3.12	BENT 11	
22H002.BID.V7.CONST4.3.3.13	BENT 12	
22H002.BID.V7.CONST4.3.3.14	BENT 13	
22H002.BID.V7.CONST4.3.3.15	BENT 14	
22H002.BID.V7.CONST4.3.3.23	ABUTMENT A2	
22H002.BID.V7.CONST4.3.3.25	BENT 15	
22H002.BID.V7.CONST4.3.3.26	BENT 16	
22H002.BID.V7.CONST4.3.3.27	BENT 17	
22H002.BID.V7.CONST4.3.3.28	BENT 18	
22H002.BID.V7.CONST4.3.3.29	BENT 19	
22H002.BID.V7.CONST4.3.3.24	BENT 20	
22H002.BID.V7.CONST4.3.4	ABUTMENT B1	
22H002.BID.V7.CONST4.3.4.1	**** NEW SUPERSTRUCTURE ****	
22H002.BID.V7.CONST4.3.4.2	SPAN A (OVER RIVER ST)	
22H002.BID.V7.CONST4.3.4.3	SPAN B	
22H002.BID.V7.CONST4.3.4.4	SPAN C	
22H002.BID.V7.CONST4.3.4.5	SPAN D (OVER PEMBROKE AVE.)	
22H002.BID.V7.CONST4.3.4.6	SPAN E	
22H002.BID.V7.CONST4.3.4.7	SPAN F	
22H002.BID.V7.CONST4.3.4.8	SPAN G	
22H002.BID.V7.CONST4.3.4.9	SPAN H	
22H002.BID.V7.CONST4.3.4.10	SPAN I	
22H002.BID.V7.CONST4.3.4.11	SPAN J	
22H002.BID.V7.CONST4.3.4.12	SPAN K	
22H002.BID.V7.CONST4.3.4.13	SPAN L	
22H002.BID.V7.CONST4.3.4.14	SPAN M	
22H002.BID.V7.CONST4.3.4.15	SPAN N	
22H002.BID.V7.CONST4.3.4.16	SPAN O	
22H002.BID.V7.CONST4.3.4.17	SPAN P (OVER BOXWOOD ST)	
22H002.BID.V7.CONST4.3.4.18	SPAN Q	
22H002.BID.V7.CONST4.3.4.19	SPAN R	
22H002.BID.V7.CONST4.3.4.20	SPAN S	
22H002.BID.V7.CONST4.3.4.21	SPAN T	
22H002.BID.V7.CONST4.3.4.22	SPAN U	
22H002.BID.V7.CONST4.3.4.23	SPAN V	
22H002.BID.V7.CONST4.3.4.23	ALL SPANS	
22H002.BID.V7.CONST4.4	**** B474 / WESTBOUND BRIDGE OVER HAMPTON RIVER ****	
22H002.BID.V7.CONST4.4.1	**** SUBSTRUCTURE ****	
22H002.BID.V7.CONST4.4.1.1	ADUTMENT A	
22H002.BID.V7.CONST4.4.1.2	PIER 1	
22H002.BID.V7.CONST4.4.1.39	PIER 2	
22H002.BID.V7.CONST4.4.1.4	BENT 3	
22H002.BID.V7.CONST4.4.1.5	BENT 4	
22H002.BID.V7.CONST4.4.1.6	BENT 5	
22H002.BID.V7.CONST4.4.1.7	BENT 6	
22H002.BID.V7.CONST4.4.1.8	BENT 7	
22H002.BID.V7.CONST4.4.1.9	PIER 3	
22H002.BID.V7.CONST4.4.1.10	BENT 8	
22H002.BID.V7.CONST4.4.1.11	BENT 10	
22H002.BID.V7.CONST4.4.1.12	BENT 11	
22H002.BID.V7.CONST4.4.1.13	BENT 12	
22H002.BID.V7.CONST4.4.1.14	BENT 13	
22H002.BID.V7.CONST4.4.1.15	BENT 14	
22H002.BID.V7.CONST4.4.1.16	BENT 15	
22H002.BID.V7.CONST4.4.1.17	BENT 16	
22H002.BID.V7.CONST4.4.1.18	BENT 17	
22H002.BID.V7.CONST4.4.1.19	BENT 18	
22H002.BID.V7.CONST4.4.1.20	BENT 19	
22H002.BID.V7.CONST4.4.1.21	BENT 20	
22H002.BID.V7.CONST4.4.1.22	BENT 21	
22H002.BID.V7.CONST4.4.1.23	BENT 22	
22H002.BID.V7.CONST4.4.1.24	BENT 23	
22H002.BID.V7.CONST4.4.1.25	BENT 24	
22H002.BID.V7.CONST4.4.1.26	BENT 25	
22H002.BID.V7.CONST4.4.1.27	BENT 26	
22H002.BID.V7.CONST4.4.1.28	BENT 27	
22H002.BID.V7.CONST4.4.1.29	BENT 28	
22H002.BID.V7.CONST4.4.1.30	BENT 29	
22H002.BID.V7.CONST4.4.1.31	BENT 30	
22H002.BID.V7.CONST4.4.1.32	BENT 31	
22H002.BID.V7.CONST4.4.1.33	BENT 32	
22H002.BID.V7.CONST4.4.1.34	BENT 33	
22H002.BID.V7.CONST4.4.1.35	BENT 34	
22H002.BID.V7.CONST4.4.1.36	PIER 35	
22H002.BID.V7.CONST4.4.1.37	PIER 36	
22H002.BID.V7.CONST4.4.1.38	PIER 37	

WBS Code	WBS Name	11/04/2014 13:24
22H002 BID V7 CONST 4.1.1	ABUTMENT D	
22H002 BID V7 CONST 4.2	1*** SUPERSTRUCTURE *****	
22H002 BID V7 CONST 4.2.1	--- SPAN A ---	
22H002 BID V7 CONST 4.2.2	--- SPAN B ---	
22H002 BID V7 CONST 4.2.3	--- SPAN C ---	
22H002 BID V7 CONST 4.2.4	--- SPAN D ---	
22H002 BID V7 CONST 4.2.5	--- SPAN E ---	
22H002 BID V7 CONST 4.2.6	--- SPAN F ---	
22H002 BID V7 CONST 4.2.7	--- SPAN G ---	
22H002 BID V7 CONST 4.2.8	--- SPAN H ---	
22H002 BID V7 CONST 4.2.9	--- SPAN I ---	
22H002 BID V7 CONST 4.2.10	--- SPAN J ---	
22H002 BID V7 CONST 4.2.11	--- SPAN K ---	
22H002 BID V7 CONST 4.2.12	--- SPAN L ---	
22H002 BID V7 CONST 4.2.13	--- SPAN M ---	
22H002 BID V7 CONST 4.2.14	--- SPAN N ---	
22H002 BID V7 CONST 4.2.15	--- SPAN O ---	
22H002 BID V7 CONST 4.2.16	--- SPAN P ---	
22H002 BID V7 CONST 4.2.17	--- SPAN Q ---	
22H002 BID V7 CONST 4.2.18	--- SPAN R ---	
22H002 BID V7 CONST 4.2.19	--- SPAN S ---	
22H002 BID V7 CONST 4.2.20	--- SPAN T ---	
22H002 BID V7 CONST 4.2.21	--- SPAN U ---	
22H002 BID V7 CONST 4.2.22	--- SPAN V ---	
22H002 BID V7 CONST 4.2.23	--- SPAN W ---	
22H002 BID V7 CONST 4.2.24	--- SPAN X ---	
22H002 BID V7 CONST 4.2.25	--- SPAN Y ---	
22H002 BID V7 CONST 4.2.26	--- SPAN Z ---	
22H002 BID V7 CONST 4.2.27	--- SPAN AA ---	
22H002 BID V7 CONST 4.2.28	--- SPAN AB ---	
22H002 BID V7 CONST 4.2.29	--- SPAN AC ---	
22H002 BID V7 CONST 4.2.30	--- SPAN AD ---	
22H002 BID V7 CONST 4.2.31	--- SPAN AE ---	
22H002 BID V7 CONST 4.2.32	--- SPAN AF ---	
22H002 BID V7 CONST 4.2.33	--- SPAN AG ---	
22H002 BID V7 CONST 4.2.34	--- SPAN AH ---	
22H002 BID V7 CONST 4.2.35	--- SPAN AI ---	
22H002 BID V7 CONST 4.2.36	--- SPAN AJ ---	
22H002 BID V7 CONST 4.2.37	--- SPAN AK ---	
22H002 BID V7 CONST 4.2.38	--- SPAN AL ---	
22H002 BID V7 CONST 4.2.39	--- ALL SPANS ---	
22H002 BID V7 CONST 4.5	**** B-671 / BRIDGE OVER SETTLERS LANDING RD ****	
22H002 BID V7 CONST 4.5.1	***** EASTBOUND *****	
22H002 BID V7 CONST 4.5.1.2	--- ABUTMENT A ---	
22H002 BID V7 CONST 4.5.1.4	--- ABUTMENT B ---	
22H002 BID V7 CONST 4.5.1.3	--- SPAN A ---	
22H002 BID V7 CONST 4.5.1.6	--- SPAN B ---	
22H002 BID V7 CONST 4.5.1.9	--- SPAN C ---	
22H002 BID V7 CONST 4.5.1.7	--- SPAN D ---	
22H002 BID V7 CONST 4.5.2	***** WESTBOUND *****	
22H002 BID V7 CONST 4.5.2.1	--- ABUTMENT A ---	
22H002 BID V7 CONST 4.5.2.2	--- PIER 1 ---	
22H002 BID V7 CONST 4.5.2.3	--- PIER 2 ---	
22H002 BID V7 CONST 4.5.2.9	--- PIER 3 ---	
22H002 BID V7 CONST 4.5.2.4	--- ABUTMENT B ---	
22H002 BID V7 CONST 4.5.2.7	--- SPAN A ---	
22H002 BID V7 CONST 4.5.2.6	--- SPAN B ---	
22H002 BID V7 CONST 4.5.2.6	--- SPAN C ---	
22H002 BID V7 CONST 4.5.2.10	--- SPAN D ---	
22H002 BID V7 CONST 4.5.2.8	--- ALL SPANS ---	
22H002 BID V7 CONST 4.6	**** B-677 OWENS STREET PEDESTRIAN UNDERPASS ****	
22H002 BID V7 CONST 4.6	**** EBW1 GRAVITY RETAINING SOUND WALL ****	
22H002 BID V7 CONST 4.7	**** EBW3 GRAVITY RETAINING WALL ****	
22H002 BID V7 CONST 4.8	**** EBW4 GRAVITY MSE RETAINING SOUND WALL ****	
22H002 BID V7 CONST 4.9	**** EBW5 MSE RETAINING SOUND WALL ****	
22H002 BID V7 CONST 4.10	**** EBW6 MSE RETAINING SOUND WALL ****	
22H002 BID V7 CONST 4.11	**** EBW6L GRAVITY MSE RETAINING SOUND WALL ****	
22H002 BID V7 CONST 4.12	**** EBW7 GRAVITY RETAINING WALL ****	
22H002 BID V7 CONST 4.13	**** EBW8 GRAVITY RETAINING WALL ****	
22H002 BID V7 CONST 4.14	**** WBW1 GRAVITY RETAINING SOUND WALL ****	
22H002 BID V7 CONST 4.15	**** WBW2 GRAVITY MSE RETAINING SOUND WALL ****	
22H002 BID V7 CONST 4.16	**** WBW3 MSE RETAINING WALL ****	
22H002 BID V7 CONST 4.17	**** WBW4 GRAVITY RETAINING SOUND WALL ****	
22H002 BID V7 CONST 1	--- ITS/TOLLING/ELECTRICAL ---	
22H002 BID V7 CONST 2	--- OVERHEAD SIGNS ---	

Calendars

The DBT has incorporated seven (7) calendars into the Project

 SUBMITTAL DEV/REV
 ASPHALT PAVING
 BRIDGE DECK
 PLANTING
 5 @ 8 H, W
 CALENDAR DAY
 CURE

- “CALENDAR DAY” This calendar is based on seven (7) working days per week, 24 Hr. Days. This calendar holds every day as a work day. This calendar has been assigned to all administrative, design, and review activities. For example, this calendar has been assigned to VDOT’s 21 calendar day review activities.
- “CURE” This calendar is based on seven (7) working days per week, 24 Hr. Days. This calendar is used for concrete cure time, generally 28 days.
- “5@8 H, W” This calendar is based on five (5) working days per week, 8 Hours/ Days with non-work days for weather. In addition to weekends, this calendar designates all major holidays and the days between Christmas and New Years as non-working days. This calendar is used for all production activities that are affected by weather.
- “PLANTING” This calendar is based on five (5) working days per week, 8 Hours/ Days with non-work days for weather, weekends, and major holidays as non-working days. In addition, this calendar blocks out the restricted planting season from March 16th to October 14th each year. This calendar is used for all tree and shrub planting activities.
- “BRIDGE DECK” This calendar is based on five (5) working days per week. In addition to weekends and major holidays, this calendar also designates the period from November 25th to April 1st as non-working days. This calendar has been assigned to all concrete-related bridge superstructure construction activities such as bridge deck and parapet wall pours that are effected by winter weather conditions.
- “ASPHALT PAVING” This calendar is based on five (5) working days per week. In addition to weekends, regular weather days and major holidays, this calendar also includes additional weather days during winter months. This calendar has been assigned to all roadway paving activities such as the installation of base, intermediate, and surface asphalt.
- “SUBMITTAL DEV/REV” This calendar is based on five (5) working days per week and restricts work on weekends and major holidays.

Our project schedule incorporates the following holidays:

- New Year’s Day Holiday – Holiday from 7:00AM December 31st until 7:00 AM the next work day following New Year’s Day, unless the holiday occurs on a Sunday. If holiday falls on Sunday, then Monday will also be considered a holiday, and work will not occur until 7:00 AM on Tuesday.
- Easter Holiday – Holiday from 7:00AM on Good Friday until 7:00 AM on the Monday following Easter Sunday.
- Memorial Day Holiday – Holiday from 7:00AM on Friday prior to Memorial Day until 7:00 AM on the Tuesday following Memorial Day.
- Independence Day Holiday – Holiday from 7:00AM on the day prior to July 4th, until 7:00 AM the next work day following July 4th unless the holiday occurs on a Sunday. If holiday falls on Sunday, then Monday will also be considered a holiday, and work will not occur until 7:00 AM on Tuesday.
- Labor Day Holiday – Holiday from 7:00AM on the Friday before Labor Day until 7:00 AM on the Tuesday following Labor Day.
- Thanksgiving Day Holiday – Holiday from 7:00AM on the Wednesday before Thanksgiving Day until 7:00 AM on the Monday following Thanksgiving Day.
- Christmas Day Holiday – Holiday from 7:00AM on the day prior to December 25th until 12:00 PM the day after December 25th.

Plan to Accomplish the Work

The narrative below describes the DBT’s project delivery plan grouped by major Work Breakdown Structure (WBS) divisions. These include quality control, design, geotechnical investigation, right-of-way acquisition, environmental investigation & permitting, utility relocation, public involvement, and construction. The overall project delivery sequence was developed based on the roadway and bridge improvement concepts shown in the RFP, along with the MOT, geotechnical, environmental, existing utility, and end user requirements identified by the RFP and the DBT. The DBT divided the project into three (3) major construction phases, each phase contains multiple geographic areas.

Design Phase

During the RFP phase the DBT has already performed the following analysis: preliminary analysis of 30 year design life to validate the minimum pavement section, structural capacity of existing roadway shoulders, applications for positive roadway subgrade drainage, verified all water quality requirements have been met with identified nutrient credit purchase, analyzed bridge structures for construction loading satisfying 107.21(d), and performed preliminary VISSIM analysis of all MOT phases showing acceptable LOS and corridor travel times. This advanced work will expedite the overall design development, submittal and approval schedule.

The DBT will finalize the design from the current RFP documents including the proposed enhancements and ATC 001 (B-674 I-64 WBL over Hampton River Pier 9 extension) to obtain approval on the Release for Construction (RFC) plan set. Design activities will include surveying, roadway design, bridge design, retaining wall design, noise barrier walls, traffic control, MOT plans, ITS, signs, signals, guardrail, pavement markings, drainage design, design of SWM facilities, geotechnical investigation (including borings and analysis), materials analysis, hydraulic design, pavement design and landscape architectural features. The project will be delivered by completing roadway design in two phases of design: ROW design, and final design (RFC). Structure plans will have a Stage 1 and Stage 2 submittal. Design-related activities to be performed during each phase are outlined below.

ROW Design submittal activities will focus on expanding the RFP documents and the proposed enhancements. In addition to including the appropriate ROW activities and hold points in the CPM, the DBT has coordinated with construction in locations such as B-674 east abutment in the vicinity of the golf course to minimize Right of Way impacts.

The DBT will perform numerous independent studies of the information contained in the RFP documents to confirm that the information provided to date is correct, suitable and adequate for use in designing the project. These additional studies will include performing supplemental field surveying to confirm horizontal and vertical control of key project features verifying type and location of existing subsurface utilities; performing legal research to confirm existing ROW and property limits, and performing a thorough geotechnical field investigation to confirm geotechnical and pavement subgrade conditions for the bridge foundations and roadway design. The findings of these studies will be summarized in a series of reports and, if discrepancies occur between the information in the RFP documents and the DBT studies, these results will be presented to VDOT for review and evaluation as outlined in the Scope Validation process for the project.

Roadway plans will be developed including performing geometric design; preparing cross sections and defining limits of construction; completing SWM and E&S control design; preparing plans for traffic control devices as well as a TMP; and completing the preliminary bridge plans working closely with the geotechnical engineers. Required ROW limits will be evaluated and depicted on the plans, and preliminary utility relocation plans will be prepared. The goal of this submittal is to gain ROW Authorization to proceed with ROW acquisition services on the project.

The ROW, environmental coordination and approval,

and utility relocation plan activities will be developed for individual submissions to VDOT and other regulatory and permitting agencies for review and approval.

Design Plan submittal will occur after receiving ROW design approval with the ROW authorization from VDOT. The DBT will submit the final design plans and reports to VDOT for review and approval. To take full advantage of the accelerated/early construction opportunities afforded by the Design-Build project delivery method, the DBT intends to develop Early Work and Final RFC plan sets as follows:

- The Construction Joint Venture of Wagman-Fay SE is assuming risk by issuing a Limited Notice to Proceed (LNTP) to the Lead Designer, EXP US Services, Inc. upon receipt of VDOT's Notice of Intent to Award. The LNTP authorizes EXP to begin key design and permitting activities.
- RFC Plan Set for Early Roadway Work Activities – Clearing, Grading, E&S, MOT & TMP
- Bridge Geotechnical Engineering Report B-676I-64 EBL/WBL over Settlers Landing
- Bridge Geotechnical Engineering Report B-672I-64 EBL/WBL over King St
- Noise Barrier Geotechnical Engineering Report - WBL
- Retaining Wall Geotechnical Engineering Report -WBL
- Bridge Geotechnical Engineering Report B-674 I-64 WBL over Hampton River
- Roadway & SWM Geotechnical Engineering Report Remainder of Work Packages
- Retaining Wall Geotechnical Engineering Report -EBL
- Bridge Geotechnical Engineering Report B-673 I-64 EBL over Hampton River
- Roadway & SWM Geotechnical Engineering Report Remainder of Work Packages
- Noise Barrier Geotechnical Engineering Report - EBL
- ROW Plans (Scheduled as two submittals)
- RFC Plans for Remainder of Work Packages (RWP): Final Roadway, Drainage, SWM, E&S, Sound Barrier, Retaining Wall, ITS, Signs, Landscape
- B-677 Owens Street Pedestrian Underpass: Stage I and II Submittals
- Bridge B-659 EBL/WBL over Riprap Rd: Stage I and II Submittals
- D-644 Triple 48" RCP Brights Creek: Stage I and II Submittals
- Bridge B-672 I-64 WBL/EBL over King St: Stage I and II Submittals
- Bridge B-676 I-64 EBL/WBL over Settlers Landing Rd: Stage I and II Submittals
- Bridge B-674 I-64 WBL over Hampton River: Stage I and II Submittals

- Bridge B-673 I-64 EBL over Hampton River: Stage I and II Submittals
- WBL Retaining Walls: Stage I and II Submittals
- WBL Ground-Mounted Sound Walls: Stage I and II Submittals
- EBL Retaining Walls: Stage I and II Submittals
- EBL Ground Mounted Sound Walls: Stage I and II Submittals
- Hazardous Material Phase I ESA
- Asbestos Inspection Report
- Noise Abatement Report

Environmental Permitting activities will begin shortly after receiving LNTP and will include a thorough environmental evaluation and confirmation of the information provided in the RFP documents.

The DBT will prepare a comprehensive environmental management plan that includes a matrix of environmental commitments and compliance requirements that; identifies milestone dates and integrates those into the project schedule; identifies the responsible party; and summarizes requirements.

The final noise analysis will be conducted including the public polling of property owners which are affected and benefited by the effected noise abatement measures.

Final environmental activities will begin immediately after receiving preliminary plan approval from VDOT. At this point in the design, the footprint for the project will be firmly established and the DBT will identify the final environmental impacts required to construct the project in its entirety.

Our sequence of construction does not require any dredging minimizing environmental impacts and time frames to obtain permit approvals.

The DBT will strive to avoid and minimize environmental impacts during design development and construction. A Stormwater Pollution Prevention Plan (SWPPP) will be developed and the registration statement for the Virginia Stormwater Management Permit will be submitted immediately following the SWPPP development.

During the RFP phase, the DBT has performed a detailed analysis of the permitting requirements for this project. The CPM identifies and accounts for all environmental commitments, TOYR, and permit conditions/requirements. Coupled with our collective past experience with projects of similar scope and permitting challenges in Hampton Roads, we have prepared a detail schedule for the permitting efforts, including:

- US Army Corps of Engineers (USACE)
- Joint Permit Application (JPA)
- Virginia Department of Environmental Quality (DEQ)

- Virginia Marine Resources Commission (VMRC)
- US Coast Guard (USCG)

Right-of-Way Acquisition - Starting at LNTP, the DBT will evaluate the proposed ROW, permanent easements, and temporary easements as shown on the plans. If changes are required, either due to a change in the required ROW or a change based on the results of legal research, the DBT will prepare updated preliminary ROW plans and a ROW data sheet and will submit to VDOT for review and approval. Preliminary ROW activities will begin after receiving NTP. The DBT will begin performing the legal research for the identified parcels on the preliminary plans at the same time that our survey crew is validating the survey information provided in the RFP package. Each parcel has an associated milestone in the schedule.

Utility Relocations – The DBT’s project schedule includes activities for holding the Utility Field Investigation (UFI) meeting, followed by preparation of the Plan & Estimate (P&E) estimates by the utility owner, approval of the P&E, and construction of the relocation. Although we have already met with each individual utility company to discuss the proposed relocations and prior rights, the utility relocation schedule starts with formal UFI meetings following completion of all utility test pits. This will enable our Team to confirm and adjust our list of utility conflicts based on the field test pit data prior to holding the formal UFI meeting. We will continue this early coordination of utilities throughout the Design Phase of the Project to ensure that our Design Plans are coordinated with the utility relocation plans. The DBT will develop and share 3D Models with visualizations with the utility owners to ensure conformance and compatibility between the P&Es and our plans and construction. The utility relocations are anticipated to be completed prior to impacting construction operations, thus avoiding potential construction delays. During construction, the DBT will inspect and as-built (using geospatial survey equipment) all utility relocations as they are being performed within the project limits to ensure they are in conformance with the P&E and allowable tolerances and the work is performed correctly the first time eliminating timely or out of phase rework

The DBT will hold bi-monthly meetings with all utility owners to review status of P&Es and update our CPM accordingly

Critical Design/Permitting Hold Points have been incorporated in our project schedule as required by the RFP and are shown below.

Planned Schedule Hold Point	Hold Point Duration (Calendar Days)
VDOT Review & Approval: Bridge Geotechnical Engineering Report B-673 I-64 EBL over Hampton River Review & Approval	90
VDOT Review & Approval: Roadway & SWM Geotechnical Engineering Report Remainder of Work Packages (WP's) - EBL Review & Approval	90
VDOT Review & Approval: Noise Barrier Geotechnical Engineering Report - EBL Review & Approval	90
VDOT & FHWA Reviews: EWP Submittal 1: Clearing / Grading / E&S / MOT & TMP	21
VDOT & FHWA Reviews: EWP Submittal 2: Clearing / Grading / E&S / MOT & TMP	21
VDOT Review: ROW Plans Submittal 1	21
VDOT Review & Approval: ROW Plans Submittal 2	21
VDOT Review & Approval: Photometric Lighting Analysis & Calculations	21
VDOT/FHWA Reviews: RWP Submittal 1: WBL Roadway/Drainage/SWM/Plantings/E&S/Sign/Marking/Lighting/Signals/ITS/MOT & TMP	21
VDOT/FHWA Reviews: RWP Submittal 2: WBL Roadway/Drainage/SWM/Plantings/E&S/Sign/Marking/Lighting/Signals/ITS/MOT & TMP	21
VDOT/FHWA Reviews: Submittal 3: EBL Roadway/Drainage/SWM/Plantings/E&S/Sign/Marking/Lighting/Signals/ITS/MOT & TMP	21
VDOT & FHWA Reviews & Approval: RWP Submittal 4: EBL Roadway/Drainage/SWM/Plantings/E&S/Sign/Marking/Lighting/Signals/ITS/MOT & TMP	21
VDOT & FHWA Reviews and Approval: Stage I B-677 Owens Street Pedestrian Underpass	21
VDOT & FHWA Reviews: Stage II B-677 Owens Street Pedestrian Underpass	21
VDOT & FHWA Reviews and Approval: Stage I B-659 I-64 EBL/WBL over Riprap Rd	21
VDOT & FHWA Reviews and Approval: Stage II B-659 I-64 EBL/WBL over Riprap Rd	21
VDOT & FHWA Reviews: Stage II (Final) B-659 I-64 EBL/WBL over Riprap Rd	21
VDOT & FHWA Reviews and Approval: Stage I D-644 Triple 48" RCP Carrying Brights Creek Beneath I-64	21
VDOT & FHWA Reviews: Stage II D-644 Triple 48" RCP Carrying Brights Creek Beneath I-64	21
VDOT & FHWA Reviews and Approval: Stage II (Final) D-644 Triple 48" RCP Carrying Brights Creek Beneath I-64	21
VDOT & FHWA Reviews and Approval: Stage I B-672 I-64 EBL/WBL over King St	21
VDOT & FHWA Reviews: Stage II B-672 I-64 EBL/WBL over King St	21
VDOT & FHWA Reviews and Approval: Stage II (Final) B-672 I-64 EBL/WBL over King St	21
VDOT & FHWA Reviews and Approval: Stage I: B-676 I-64 EBL/WBL over Settlers Landing Rd	21
VDOT & FHWA Reviews: Stage II: B-676 I-64 EBL/WBL over Settlers Landing Rd	21
VDOT & FHWA Reviews and Approval: Stage II (Final): B-676 I-64 EBL/WBL over Settlers Landing Rd	21
VDOT & FHWA Reviews and Approval: Stage I B-674 I-64 WBL over Hampton River	21
VDOT & FHWA Reviews: Stage II B-674 I-64 WBL over Hampton River	21

Planned Schedule Hold Point	Hold Point Duration (Calendar Days)
VDOT & FHWA Reviews and Approval: Stage II (Final) B-674 I-64 WBL over Hampton River	21
VDOT & FHWA Reviews and Approval: Stage I B-673 I-64 EBL over Hampton River	21
VDOT & FHWA Reviews: Stage II B-673 I-64 EBL over Hampton River	21
VDOT & FHWA Reviews and Approval: Stage II (Final) B-673 I-64 EBL over Hampton River	21
VDOT & FHWA Reviews and Approval: Stage I WBL Retaining Walls	21
VDOT & FHWA Reviews and Approval: Stage II WBL Retaining Walls	21
VDOT & FHWA Reviews and Approval: Stage I WBL Ground-Mounted Noise Walls	21
VDOT & FHWA Reviews and Approval: Stage II WBL Ground-Mounted Noise Walls	21
VDOT & FHWA Reviews and Approval: Stage I EBL Retaining Walls	21
VDOT & FHWA Reviews and Approval: Stage II EBL Retaining Walls	21
VDOT & FHWA Reviews and Approval: Stage I EBL Ground-Mounted Noise Walls	21
VDOT & FHWA Reviews and Approval: Stage II EBL Ground-Mounted Noise Walls	21
VDOT Review/Approval SPCC: Hazardous Material Phase I ESA	21
VDOT/FHWA Hazardous Material Phase I ESA - Hold Point	21
VDOT Review: Noise Abatement	21
US Army Corps of Engineers (USACE)	
Reviewing Agency Coordination (NOAA etc.)	100
Permit Agency Reviews Response (Round 1)	30
Permit Agency Reviews Response (Round 2)	21
USACE Permit Issuance	21
Virginia Department of Environmental Quality (DEQ)	
Coastal Zone Consistency Determination	90
Permit Agency Reviews Response (Round 1)	21
Permit Agency Reviews Response (Round 2)	21
DEQ Issues Draft Permit	14
Public Notice (Virginian Pilot JV ~ \$800)	15
Finalize Permit Writing	15
DEQ Permit Issuance	15
Virginia Marine Resources Commission (VMRC)	
Public Notice (Virginian Pilot)	21
Additional Information Request #1	5
Add Info Response by EXP	20
Permit Agency Reviews Response (Round 1)	10
Permit Agency Reviews Response (Round 1)	10
VMRC Hearing (Sept 2018)	5
Permit Writing	21
US Coast Guard	
Permit Agency Reviews Response (Round 1)	21
Permit Agency Reviews Response (Round 2)	21
VDOT Review	21
US Coast Guard Permit Issuance	30

Planned Schedule Hold Point	Hold Point Duration (Calendar Days)
Public Review	30
Review Responses to Public Notice	30
VDOT Review and Approve Acquisition Plan Inc. EQ-201 Revaluation - Hold Point	21
VDOT Issue Notice to Proceed for ROW Acquisitions-Hold Point	13
VDOT Rvw & Appr. Appraisal Packages, Just Compensation, Relocation Benefits and Admin. Settlements-Acquisitions	31
VDOT/FHWA Issue Clearance for Construction - Acquisitions-Hold Point	21
VDOT Review & Approve Utility Assembly	21

Scope Validation - The scope validation period is 120 days after NTP, and the schedule depicts activities that are relevant to the validation work, and VDOT review of the submittal. During the RFP phase the DBT has already developed a preliminary geotechnical investigation plan that identified any gaps in available data so that additional borings and analysis can be scheduled and performed within the 120 day scope validation period.

Public Outreach - The public outreach schedule includes developing and submitting our Emergency Contact List and Response Plan upon Notice to Proceed, holding citizen information meetings during the design phase, public information “Pardon our Dust” meetings at the start of construction, providing frequent updates to the Office of Public Affairs, and additional specific group meetings as necessary. The schedule includes “level of effort” type activities for these Public Information meetings intended to also cover many other public involvement activities that our Team will perform, including quarterly meeting with local businesses and affected property owners during design and construction, attending meetings with homeowners associations, local government representatives, and community groups, and providing information for regular updates at progress meetings and weekly lane closure plans. These “level of effort” type activities will be further defined during development of our Baseline CPM.

Specific to community meetings, the DBT will host community meetings one month prior to construction start and one month prior to construction end, as well as quarterly meetings with impacted business groups during both the design and construction phases. The DBT will be prepared to meet with local civic leagues as requested, as well as preparing presentations for VDOT staff to present to local TPO when project updates are requested. All presentations will be reviewed and approved by VDOT.

Regarding Public Information Meetings, the DBT will host 3 public information meetings as approved by VDOT to present traffic impacts (including impacts to all City of Hampton Roads), the proposed limits of clearing, the proposed landscape plan, the SWM design and improvements, and the Final

Noise Analysis results. The DBT will inform all stakeholders of the meetings and information presented at the public meetings shall be submitted to the VDOT PM and VDOT Public Affairs for approval

In addition to the community and public information meetings required by the RFP, the DBT will host meetings prior to implementation of each major traffic phase. The DBT will develop drive thru simulations (Video Graphic Models) and provide to VDOT for appropriate use.

Project Construction

Construction Sequence:

Phase 1 will be comprised of three sub phases: Phase 1A, Phase 1B & Phase 1C.

- Phase 1A we will strengthen the the outside shoulders of I-64 EB utilizing milling and paving operation using temporary lane closures during times permitted by the RFP. In Phase 1A, we will also start the rehabilitation of the triple 48-inch culverts at Brights Creek as part of an early works package.
- Phase 1B will shift the I-64 EB travel lanes onto the reconstructed shoulder and right travel lane and channelize I-64 WB traffic onto the two outermost lanes using a long term stationary work zone with Traffic Barrier Service Concrete (TBSC) to allow the removal of the median barrier, construction of mainline I-64 temporary crossovers and temporary reconstruction of median to support the lane widths. This allows all lanes of traffic to be switched to I-64 EB and opens I-64 WB for reconstruction, to include bridge widening overlay, retaining walls, noise walls.
- Phase 1C will direct the two (2) WB travel lanes across the newly constructed crossovers and onto the EB side of the roadway. Temporary concrete barrier will be placed along the WB Shoulder edge finalizing the Phase 1 traffic realignment. With traffic switched to I-64 EB, I-64 WB Phase 1 roadway and structure work will commence. Elements of work in this phase include
 - Bridge widening for Westbound Hampton

- River Bridge;
- Bridge widening for Settlers Landing Road;
- Bridge overlay, bearing replacement and substructure repair on Westbound Bridges over Hampton River, King Street, Settlers Landing Road and Rip Rap Road overpasses;
- Owens Street pedestrian underpass;
- Roadway drainage installation in the westbound travel lanes, all areas;
- Mainline pavement & shoulder reconstruction or mill and overlay, all areas;
- Construction of WB retaining walls and noise walls, WBW1 – WBW4;
- Installation of lighting, ground mount and overhead signs and ITS infrastructure.

Phase 2 is broken into 2 sub-phases Phase 2A & Phase 2B

- Phase 2A will again channelize traffic into the two outermost lanes in each direction using temporary barrier to permit the reconstruction of the crossovers and repositioning of temporary median barrier. For this phase, WB traffic will be shifted to the outermost WB travel lanes and EB traffic will remain unchanged.
- Phase 2B consists of the shifting the EB traffic to the WB roadway, establishing both directions of travel in the I-64 WB lanes, followed by the placement of temporary barrier to establish the work zone within the EB roadway. Once Phase 2 is established, work activities for this phase can commence, including:
 - Removal and replacement of the eastbound Hampton River Bridges;
 - Bridge overlay, bearing replacement and substructure repair on eastbound bridges over King Street, Settlers Landing Road and Rip Rap Road;
 - Roadway drainage installation in the eastbound travel lanes, all areas;
 - Mainline pavement & shoulder reconstruction or mill and overlay, all areas;
 - Construction of EB retaining walls and noise walls, EBW1 – EBW8;
 - Installation of lighting, ground mount and overhead signs and ITS infrastructure.

Phase 3 is the final phase and contains 2 sub-phases Phase 3A and Phase 3B

- Phase 3A consists of the shifting the EB traffic to the outermost EB roadway, followed by the placement of temporary barrier to establish the work zone in the median of I-64. With traffic in the outside lanes, construction in the median to remove crossovers, reconstruct shoulders, and construct median barrier can occur. Overhead sign structures will be placed into final locations with all signs and ITS and Tolling equipment installed.

- Phase 3B begins once the median work is complete and consists of removal of the temporary concrete barriers, pavement milling, overlay, markings and roadway finishes placing traffic into its ultimate position and open traffic to the newly constructed toll lanes.

Major Traffic Shifts

Our MOT phasing requires only 3 major phases and the traveling public will be completely separated from construction areas providing contiguous areas of existing I-64 for staging and more efficient construction the full length of the project. The DBT’s plan for project construction anticipates the following major traffic switch and MOT milestones during construction:

Planned Traffic Shifts / MOT Milestone	Planned Shift Date
Implement Phase 1A	3/8/2023
Implement Phase 1B	4/6/2023
Implement Phase 1C	8/18/2023
Implement Phase 2A	10/9/2024
Implement Phase 2B	11/7/2024
Implement Phase 3A	6/8/2026
Implement Phase 3B	10/9/2026

Project Critical Path

The Critical Path will be continually analyzed throughout the project to ensure the entire team is concentrating on activities required to achieve key project milestones. The overall critical path, based on the Longest Path, essentially includes rehabilitation/construction of B-674 and then construction of B-673.

The overall critical path of the project (longest path) is summarized below:

- Geotechnical/Roadway/Structure Design Early Work Packages
- Environmental Permit Approval
- Rehabilitation/Construction of B-674
- Shifting Traffic onto WB lanes
- Demolition/Construction of B-673

The complete critical path is shown in Table 4.6.2. The activities have been filtered by both Longest Path and Critical in order to include the interim milestone activities.

Table 4.6.2: Critical Path Filtered By Longest Path

Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026																																			
							J	J	A	S	O	N	D	J	J	A	S	O	N	D	J	J	A	S	O	N	D	J	J	A	S	O	N	D	J	J	A	S	O	N	D																																																	
(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7																																																																																										
##### CONTRACT ADMINISTRATION #####																																																																																										
CA.100	**** Limited Notice-to-Proceed (Design) (24JU N22) ****	0	24-Jun-22*		0	CALENDAR DAY	◆ **** Limited Notice-to-Proceed (Design) (24JU N22) ****																																																																																			
CA.105	**** Anticipated Notice-to-Proceed (01AUG22) ****	0	01-Aug-22*		5	5 @ 8 H, W	◆ **** Anticipated Notice-to-Proceed (01AUG22) ****																																																																																			
CA.120	Final Inspection Walkthrough	1	10-Nov-26	10-Nov-26	9	5 @ 8 H, W																																																																																				
CA.110	**** Construction Substantial Completion ****	0		10-Nov-26	13	CALENDAR DAY																																																																																				
CA.125	Complete Construction Punchlist	20	11-Nov-26	10-Dec-26	9	5 @ 8 H, W																																																																																				
CA.130	**** Contract Final Completion (30DEC26) ****	0		10-Dec-26*	19	CALENDAR DAY																																																																																				
##### EXECUTIVE SUMMARY & MILESTONES #####																																																																																										
===== PHASE 1C =====																																																																																										
MOT.PH1C.105	Shift Traffic/Implement Phase 1C	0	21-Aug-23	21-Aug-23	24	5 @ 8 H, W													Shift Traffic/Implement Phase 1C																																																																							
MOT.PH1C.110	Phase 1C Duration (LoE)	415	21-Aug-23	09-Oct-24	2	CALENDAR DAY													Phase 1C Duration (LoE)																																																																							
MOT.PH1C.115	End Phase 1C	0	09-Oct-24	09-Oct-24	3	5 @ 8 H, W													End Phase 1C																																																																							
===== PHASE 2A =====																																																																																										
MOT.PH2A.105	Shift Traffic/Implement Phase 2A	0	09-Oct-24	09-Oct-24	3	5 @ 8 H, W													Shift Traffic/Implement Phase 2A																																																																							
MOT.PH2A.110	Phase 2A Duration (LoE)	29	09-Oct-24	07-Nov-24	5	CALENDAR DAY													Phase 2A Duration (LoE)																																																																							
MOT.PH2A.115	End Phase 2A	1	07-Nov-24	07-Nov-24	3	5 @ 8 H, W													End Phase 2A																																																																							
===== PHASE 2B =====																																																																																										
MOT.PH2B.100	Shift Traffic/Implement Phase 2B	5	08-Nov-24	14-Nov-24	3	5 @ 8 H, W													Shift Traffic/Implement Phase 2B																																																																							
MOT.PH2B.105	Phase 2B Duration (LoE)	571	14-Nov-24	08-Jun-26	10	CALENDAR DAY													Phase 2B Duration (LoE)																																																																							
MOT.PH2B.110	End Phase 2B	0	08-Jun-26	08-Jun-26	9	5 @ 8 H, W													End Phase 2B																																																																							
===== PHASE 3A =====																																																																																										
MOT.PH3A.105	Shift Traffic/Implement Phase 3A	0	08-Jun-26	08-Jun-26	9	5 @ 8 H, W													Shift Traffic/Implement Phase 3A																																																																							
MOT.PH3A.110	Phase 3A Duration (LoE)	123	08-Jun-26	09-Oct-26	12	CALENDAR DAY													Phase 3A Duration (LoE)																																																																							
MOT.PH3A.115	End Phase 3A	0	09-Oct-26	09-Oct-26	9	5 @ 8 H, W													End Phase 3A																																																																							
===== PHASE 3B =====																																																																																										
MOT.PH3B.100	Shift Traffic/Implement Phase 3B	0	09-Oct-26	09-Oct-26	9	5 @ 8 H, W													Shift Traffic/Implement Phase 3B																																																																							
MOT.PH3B.105	Phase 3B Duration (LoE)	32	09-Oct-26	10-Nov-26	10	CALENDAR DAY													Phase 3B Duration (LoE)																																																																							
MOT.PH3B.110	End Phase 3B	0	10-Nov-26	10-Nov-26	9	5 @ 8 H, W													End Phase 3B																																																																							
##### DESIGN/ENGINEERING SUBMITTALS/REVIEW #####																																																																																										
===== ROADWAY DESIGN =====																																																																																										
Roadway Design- ROW Plans																																																																																										
SUB.ROADROW.110	Develop Signing, Marking, Lighting, Signal, ITS, MOT Plans & Draft TMP Submittal 1	120	29-Jun-22	19-Dec-22	23	SUBMITTAL DEV/REV	Develop Signing, Marking, Lighting, Signal, ITS, MOT Plans & Draft TMP Submittal 1																																																																																			
SUB.ROADROW.135	ROW Plans Design QA/QC & Constructability Reviews	5	20-Dec-22	28-Dec-22	23	SUBMITTAL DEV/REV	ROW Plans Design QA/QC & Constructability Reviews																																																																																			
SUB.ROADROW.140	Submit ROW Plans Submittal 1	0	28-Dec-22		34	CALENDAR DAY	◆ Submit ROW Plans Submittal 1																																																																																			
SUB.ROADROW.145	VDOT Review	21	28-Dec-22	18-Jan-23	34	CALENDAR DAY	VDOT Review																																																																																			
SUB.ROADROW.150	Finalize ROW Plans	14	19-Jan-23	07-Feb-23	24	SUBMITTAL DEV/REV	Finalize ROW Plans																																																																																			
SUB.ROADROW.155	ROW Plans Design QA/QC & Constructability Reviews	5	08-Feb-23	14-Feb-23	24	SUBMITTAL DEV/REV	ROW Plans Design QA/QC & Constructability Reviews																																																																																			
SUB.ROADROW.160	Submit ROW Plans Submittal 2- Final	0	14-Feb-23		34	CALENDAR DAY	◆ Submit ROW Plans Submittal 2- Final																																																																																			
SUB.ROADROW.165	VDOT Review	21	14-Feb-23	07-Mar-23	34	CALENDAR DAY	VDOT Review																																																																																			
SUB.ROADROW.170	ROW Plans Approval	0	07-Mar-23		34	CALENDAR DAY	◆ ROW Plans Approval																																																																																			
SUB.ROADROW.175	ROW Acquisition for Phase 1C	165	07-Mar-23	19-Aug-23	34	CALENDAR DAY	ROW Acquisition for Phase 1C																																																																																			
===== ENVIRONMENTAL =====																																																																																										
Hazardous Materials																																																																																										
SUB.HAZM.120	Perform Asbestos Inspection On All Structures	29	30-Aug-22	10-Oct-22	6	SUBMITTAL DEV/REV	Perform Asbestos Inspection On All Structures																																																																																			
SUB.HAZM.125	Submit Asbestos Inspection Report	0	10-Oct-22		9	CALENDAR DAY	◆ Submit Asbestos Inspection Report																																																																																			
SUB.HAZM.130	VDOT/FHWA Hazardous Material Phase I ESA - Hold Point	21	11-Oct-22	08-Nov-22	6	SUBMITTAL DEV/REV	VDOT/FHWA Hazardous Material Phase I ESA - Hold Point																																																																																			
===== PERMITS =====																																																																																										
US Army Corps of Engineers (USACE)																																																																																										
SUB.USACE.100	Completeness Review	30	12-Dec-22	25-Jan-23	6	SUBMITTAL DEV/REV	Completeness Review																																																																																			
SUB.USACE.105	Public Notice Issuance	0	25-Jan-23		9	CALENDAR DAY	◆ Public Notice Issuance																																																																																			

Start: 24-Jun-22
End: 10-Dec-26
Data: 24-Jun-22
Run: 11-May-22

Critical Remaining Work	Changed Work	Delay/Impact
Remaining Work	Remaining Level of Effort	Adverse Weather
Actual Work	Actual Level of Effort	Additional/Extra Work

(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7

(RPT) BARCHART (11x17) | TASK filter: Longest Path.

The schedule is the most important tool in the construction management process and is an efficient method to communicate the intended sequence and progress of the project to the construction team as well as the project stakeholders. The schedule is an extremely useful and productive planning tool. The DBT takes pride in our detailed advance planning for safe and efficient execution of the work. Our Construction Managers, Superintendents, Safety Professionals, and Craft Supervisors use this critical tool as the first step in developing Activity Hazard Analyses and Activity Work Plans. In addition to early planning, the schedule is used to monitor the project’s progress and help identify potential deficiencies and problem areas before they develop into a critical impact.

The project management team will continually review and monitor the schedule and use the information gathered to develop mitigation strategies for any activities that are identified as potential impacts. During our monthly progress meetings with VDOT, the DBT will provide monitor screens to view our CPM in real time instead of just reviewing static PDF or printed hard copies. This lets the project team (DBT and VDOT) run real time “what if” scenarios to see the effect on critical path or other key dates.

This proactive approach will ensure that the project continues to move forward and that any potential delays are addressed immediately. A variety of different tools will be utilized to assist with this process, including but not limited to, the following:

- Weekly schedule meetings between the engineering and construction team members during the design phase
- Weekly construction scheduling meetings throughout the duration of the construction process with the construction team (including

- management)
- Monthly progress meetings to include all project stakeholders, project team members, and subcontractors
- Three-week look ahead schedules
- RFI logs
- Submittal logs
- Work plans
- Subcontract/purchase order logs
- Shop drawing tracking logs
- Weekly manpower and equipment reviews.

All of the above referenced tools will be utilized simultaneously to provide a current and realistic picture of the progress and status at any given time. Information will be presented at meetings to all who are involved for the opportunity to discuss and address any concerns in front of all that are affected. This keeps the line of communication open and allows resolutions and recovery strategies to be developed at an early stage; therefore, preventing further conflict.

The project schedule will also be critically important to the management of our QA/QC inspection, testing, and documentation efforts. By resource loading our construction activities with crews classified by construction discipline, and reviewing the associated resource histograms on a weekly basis, our team will be able to identify all current and future QA/QC hold points, and to quantify QA/QC coverage and testing resources needed to provide robust quality control in a timely and efficient manner. The Proposal CPM was used to run the histogram (Figure 4.6.3) showing labor resources by individual crew type including subcontractors. This data was used to assign appropriate levels of QA and QC staff to perform the necessary inspections and testing. The QA/QC staffing plan histogram chart is also provided on the following page (Figure 4.6.4.).

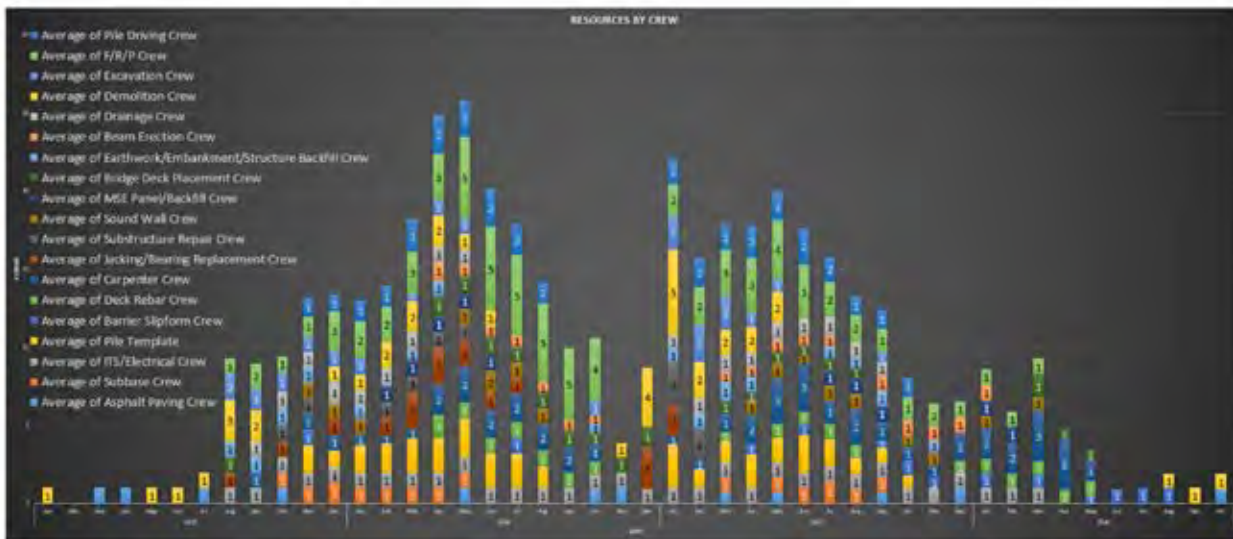


Figure 4.6.3: Labor Crew Resource Histogram

The DBT has developed and refined numerous best practices related to QA/QC in our delivery of VDOT DB projects in multiple districts. These practices have recently been enhanced to satisfy the expectations communicated to our overall industry by VDOT Senior Management. This excellent performance was recently validated by the VDOT OIA initial QCIP audit of our I-95 SB RRC where the DBT member Wagman obtained a score of 97.23. The following practices will be implemented on this project:

- All key and value added staff will remain committed to the project and not delegate their duties.
- The CPM schedule will include separate activities for constructability and QA/QC reviews by the DBT as well as VDOT and agency reviews. The EICE will ensure these reviews occur and that the design submittals will be stamped after review and prior to formal submission.
- Written work plans are developed for construction activities with noted witness and hold points for safety, QA, and QC inspections. These written plans will be reviewed and incorporated into the formal Preparatory Meetings
- Proactive QA/QC inspections with vigilant written documentation (inspection logs, Deficiencies, and NCRs) of any issues with potential to affect quality or safety for tracking

and follow through until formal resolution by the EIC and/or Designer/Engineer of Record as required.

- All underdrains will be inspected by a third party not involved in the design or construction. These inspection activities are captured in the CPM and will be performed, reviewed, and provided to VDOT after intermediate asphalt is complete and prior to transitioning to subsequent MOT phases
- The QAM will hold formal QA/QC meetings at the project field office at least weekly to review: look ahead schedules, staffing assignments, preparatory meetings, QA/QC logs, inspection reports, and the quantity ledger book.
- Additional DBT Members (SWM/ESC Design Lead), EIC, Safety Director, Sr. QA Inspector, and Sr. QC Inspector) will assist the ECM by rotating their participation in the Construction Runoff Control Inspections (CRCI).
- CRCI will occur twice a week at a minimum and after every measurable storm event.
- Contractor QA/QC Plan will be updated and maintained with all proper official documentation.
- In addition to monthly CPM updates, DBT will include detailed 4 and 10-week look ahead schedules that will be shared with adjacent projects. This enhances operational coordination among projects and provides accurate & predictable information for use in public outreach.

QA/QC Staff Histogram
 (Based on monthly averages from the construction schedule's early start dates)

Description	2023												2024												2025												2026															
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Bridge Crews	0	0	0	0	0	0	0	0	0	0	0	0	6	6	8	9	10	10	13	20	20	15	14	10	8	8	2	6	18	12	14	14	15	12	11	10	9	6	5	5	7	5	7	4	3	1	0	0	0	0	0	
Roadway Crews	0	0	0	0	0	2	2	2	2	2	2	2	4	4	4	4	5	4	4	5	5	6	5	4	4	2	3	2	2	4	4	4	5	5	5	4	4	3	2	2	2	2	2	2	2	2	2	2	2	2		
QA Staffing Plan																																																				
QA Manager	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Assistant QA Manager	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Lead Bridge Inspector	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Lead Roadway Inspector	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Regular Inspector/Technicians	0	0	0	0	0	0	0	0	0	0	0	2	2	2	3	3	4	4	5	7	7	5	5	4	2	2	0	1	6	4	5	5	4	4	4	3	1	1	1	1	1	2	1	0	0	0	0	0	0	0		
Office Engineer	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
QC Staffing Plan																																																				
QC Manager	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Assistant QC Manager	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Lead Bridge Inspector	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Lead Roadway Inspector	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Regular Inspector/Technicians	0	0	0	0	0	0	0	0	0	0	3	3	3	4	6	5	8	11	11	9	7	5	3	4	0	2	9	6	7	7	9	7	7	5	5	3	2	2	3	2	3	1	1	0	0	0	0	0	0	0		
Office Engineer	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Figure 4.6.4: QA/QC Staffing

Subcontractor and Material Supplier Scheduling

Over the last forty years the DBT has developed relationships with local subcontractors and vendors (including DBEs and SWaMs) that will supplement our internal crews to maintain the project schedule.

Subcontractors and material suppliers are a critical part of the project schedule. The DBT will closely evaluate each subcontractor and supplier based on quality, performance, and reputation. Beginning with the initial subcontract paperwork, each subcontractor will be intimately involved with every aspect of the project schedule, and their input will be vital. Suppliers will go through a similar process. This includes progress meetings, weekly look-ahead schedules, material submittals, and recovery strategies if needed. Accountability is the key to effective subcontractor and supplier management, and it will be perfectly clear that subcontractors and suppliers will be held accountable for all aspects of their work from quality to schedule.

Schedule Recovery

Unexpected issues and unforeseen conditions are a possibility during the construction process. The DBT includes many experienced and well-respected members in the DB field with the ability to recognize and react to any issues that may arise. Specifically, the DBT's local crews are experienced in the safe and efficient construction of projects of similar scope and complexity. The DBT has the ability to self perform all activities of work that are critical to control the schedule. We will aggressively manage the project and, if needed, mitigate issues that affect the construction schedule. If necessary, a schedule recovery strategy will be developed, immediately implemented, and closely monitored until the schedule is recovered. Should schedule recovery be required, the DBT has two Field Service Centers (FSC) in close proximity to this Project. We have a local equipment fleet valued at over \$75 million and over 500 regional construction professionals. The DBT has active marine operations already mobilized into the project area. Therefore, Wagman's resources can be quickly mobilized to recover the schedule.

4.6.3 Proposal Schedule in electronic format (XER file)

The DBT has provided a copy of the Proposal Schedule and narrative in PDF format as well as a backup copy of the Proposal Schedule's source document in XER format.

Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D					
(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7																																																																		
##### CONTRACT ADMINISTRATION #####																																																																		
CA.100	**** Limited Noticed-to-Proceed (Design) (24JU N22) ****	0	24-Jun-22*		0	CALENDAR DAY	◆ **** Limited Noticed-to-Proceed (Design) (24JU N22) ****																																																											
CA.105	**** Anticipated Notice-to-Proceed (01AUG22) ****	0	01-Aug-22*		5	5 @ 8 H, W	◆ **** Anticipated Notice-to-Proceed (01AUG22) ****																																																											
PS.140	Demobilization	20	10-Nov-26	09-Dec-26	10	5 @ 8 H, W																																																												
CA.115	Contract Closeout	20	10-Nov-26	30-Nov-26	30	CALENDAR DAY																																																												
CA.120	Final Inspection Walkthrough	1	10-Nov-26	10-Nov-26	9	5 @ 8 H, W																																																												
CA.110	**** Construction Substantial Completion ****	0		10-Nov-26	13	CALENDAR DAY																																																												
CA.125	Complete Construction Punchlist	20	11-Nov-26	10-Dec-26	9	5 @ 8 H, W																																																												
CA.130	**** Contract Final Completion (30DEC26) ****	0		10-Dec-26*	19	CALENDAR DAY																																																												
##### EXECUTIVE SUMMARY & MILESTONES #####																																																																		
MS.RIVER.100	* River Street Park to Close (03OCT22) *	0	03-Oct-22*		143	CALENDAR DAY	◆ * River Street Park to Close (03OCT22) *																																																											
MS.INTERIM.105	* Demobilize Marine Access & Equipment (28FEB26) *	45	13-Jan-26	27-Feb-26*	1	CALENDAR DAY																																					■ * Demobilize Marine Access & Equipment																							
MS.INTERIM.100	* Interim Milestone - Open EB/WB Lanes to Traffic East of Settler's Landing Rd (02JUL26) *	0		10-Jun-26*	21	CALENDAR DAY																																					◆ * Interim Milestone																							
===== TOTAL PHYSICAL WORK DURATION =====																																																																		
TPW.100	Begin Physical Work	0	03-Jan-23		35	5 @ 8 H, W	◆ Begin Physical Work																																																											
TPW.105	***** Physical Work Duration *****	1407	03-Jan-23	10-Nov-26	43	CALENDAR DAY	■ ***** Physical Work Duration *****																																																											
TPW.110	Finish Physical Work	0		10-Nov-26	30	5 @ 8 H, W																																					◆ Finish Physical Work																							
===== PHASE 1A =====																																																																		
MOT.PH1A.105	Implement Phase 1A	0	08-Mar-23	08-Mar-23	25	5 @ 8 H, W	Implement Phase 1A																																																											
MOT.PH1A.110	Phase 1A Duration (LoE)	29	08-Mar-23	06-Apr-23	36	CALENDAR DAY	■ Phase 1A Duration (LoE)																																																											
MOT.PH1A.115	End Phase 1A	0	06-Apr-23	06-Apr-23	25	5 @ 8 H, W	End Phase 1A																																																											
===== PHASE 1B =====																																																																		
MOT.PH1B.105	Shift Traffic/Implement Phase 1B	0	06-Apr-23	06-Apr-23	25	5 @ 8 H, W	Shift Traffic/Implement Phase 1B																																																											
MOT.PH1B.110	Phase 1B Duration (LoE)	134	06-Apr-23	18-Aug-23	35	CALENDAR DAY	■ Phase 1B Duration (LoE)																																																											
MOT.PH1B.115	End Phase 1B	0	18-Aug-23	18-Aug-23	25	5 @ 8 H, W	End Phase 1B																																																											
===== PHASE 1C =====																																																																		
MOT.PH1C.105	Shift Traffic/Implement Phase 1C	0	21-Aug-23	21-Aug-23	24	5 @ 8 H, W	Shift Traffic/Implement Phase 1C																																																											
MOT.PH1C.110	Phase 1C Duration (LoE)	415	21-Aug-23	09-Oct-24	2	CALENDAR DAY	■ Phase 1C Duration (LoE)																																																											
MOT.PH1C.115	End Phase 1C	0	09-Oct-24	09-Oct-24	3	5 @ 8 H, W	End Phase 1C																																																											
===== PHASE 2A =====																																																																		
MOT.PH2A.105	Shift Traffic/Implement Phase 2A	0	09-Oct-24	09-Oct-24	3	5 @ 8 H, W	Shift Traffic/Implement Phase 2A																																																											
MOT.PH2A.110	Phase 2A Duration (LoE)	29	09-Oct-24	07-Nov-24	5	CALENDAR DAY	■ Phase 2A Duration (LoE)																																																											
MOT.PH2A.115	End Phase 2A	1	07-Nov-24	07-Nov-24	3	5 @ 8 H, W	End Phase 2A																																																											
===== PHASE 2B =====																																																																		
MOT.PH2B.100	Shift Traffic/Implement Phase 2B	5	08-Nov-24	14-Nov-24	3	5 @ 8 H, W	Shift Traffic/Implement Phase 2B																																																											
MOT.PH2B.105	Phase 2B Duration (LoE)	571	14-Nov-24	08-Jun-26	10	CALENDAR DAY	■ Phase 2B Duration (LoE)																																																											
MOT.PH2B.110	End Phase 2B	0	08-Jun-26	08-Jun-26	9	5 @ 8 H, W	End Phase 2B																																																											
===== PHASE 3A =====																																																																		
MOT.PH3A.105	Shift Traffic/Implement Phase 3A	0	08-Jun-26	08-Jun-26	9	5 @ 8 H, W	Shift Traffic/Implement Phase 3A																																																											
MOT.PH3A.110	Phase 3A Duration (LoE)	123	08-Jun-26	09-Oct-26	12	CALENDAR DAY	■ Phase 3A Duration (LoE)																																																											
MOT.PH3A.115	End Phase 3A	0	09-Oct-26	09-Oct-26	9	5 @ 8 H, W	End Phase 3A																																																											
===== PHASE 3B =====																																																																		
MOT.PH3B.100	Shift Traffic/Implement Phase 3B	0	09-Oct-26	09-Oct-26	9	5 @ 8 H, W	Shift Traffic/Implement Phase 3B																																																											
MOT.PH3B.105	Phase 3B Duration (LoE)	32	09-Oct-26	10-Nov-26	10	CALENDAR DAY	■ Phase 3B Duration (LoE)																																																											
MOT.PH3B.110	End Phase 3B	0	10-Nov-26	10-Nov-26	9	5 @ 8 H, W	End Phase 3B																																																											
##### DESIGN/ENGINEERING SUBMITTALS/REVIEW #####																																																																		
===== QA/QC DESIGN PLAN =====																																																																		
SUB.QAQC.100	QA/QC Design Plan Preparation	19	24-Jun-22	21-Jul-22	114	SUBMITTAL DEV/REV	■ QA/QC Design Plan Preparation																																																											
SUB.QAQC.105	QA/QC Design Plan Submittal to CIV	0		21-Jul-22	114	SUBMITTAL DEV/REV	◆ QA/QC Design Plan Submittal to CIV																																																											
SUB.QAQC.110	CIV Review	5	22-Jul-22	28-Jul-22	114	SUBMITTAL DEV/REV	■ CIV Review																																																											

Start: 24-Jun-22
End: 10-Dec-26
Data: 24-Jun-22
Run: 11-May-22

Critical Remaining Work	Changed Work	Delay/Impact
Remaining Work	Remaining Level of Effort	Adverse Weather
Actual Work	Actual Level of Effort	Additional/Extra Work

(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7

(RPT) BARCHART (11x17) | TASK filter: All Activities

Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D																																																											
■ SUB.B-672.100	Prepare B-672 I-64 EBL/WBL over King St Stage I Submission	15	29-Nov-22	14-Dec-22	263	CALENDAR DAY													■ Prepare B-672 I-64 EBL/WBL over King St Stage I Submission																																															
■ SUB.B-672.105	Design QA/QC & Constructability Reviews: B-672 I-64EBL/WBL over King St Stage I Submission	5	14-Dec-22	19-Dec-22	263	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: B-672 I-64EBL/WBL over King St Stage I Submission																																															
■ SUB.B-672.110	Submit Stage I: B-672 I-64 EBL/WBL over King St	0	19-Dec-22		263	CALENDAR DAY													◆ Submit Stage I: B-672 I-64 EBL/WBL over King St																																															
■ SUB.B-672.115	VDOT & FHWA Reviews and Approval	21	19-Dec-22	09-Jan-23	263	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-672.120	Prepare B-672 I-64 EBL/WBL over King St Stage II Submission	45	09-Jan-23	23-Feb-23	263	CALENDAR DAY													■ Prepare B-672 I-64 EBL/WBL over King St Stage II Submission																																															
■ SUB.B-672.125	Design QA/QC & Constructability Reviews: B-672 I-64EBL/WBL over King St Stage II Submission	5	23-Feb-23	28-Feb-23	263	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: B-672 I-64EBL/WBL over King St Stage II Submission																																															
■ SUB.B-672.130	Submit Stage II: B-672 I-64 EBL/WBL over King St	0	28-Feb-23		263	CALENDAR DAY													◆ Submit Stage II: B-672 I-64 EBL/WBL over King St																																															
■ SUB.B-672.135	VDOT & FHWA Reviews and Approval	21	28-Feb-23	21-Mar-23	263	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-672.140	Final Revisions, VDOT & FHWA Review & Approval B-672	21	21-Mar-23	11-Apr-23	263	CALENDAR DAY													■ Final Revisions, VDOT & FHWA Review & Approval B-672																																															
■ SUB.B-672.145	Release for Construction Plans B-672	0	29-May-23		215	CALENDAR DAY													◆ Release for Construction Plans B-672																																															
■ SUB.B-672.150	Bridge B-672 Construction Unit Cost Report < 90 Days of RFC	90	29-May-23	27-Aug-23	1184	CALENDAR DAY													■ Bridge B-672 Construction Unit Cost Report < 90 Days of RFC																																															
Bridge B-676 I-64 EBL/WBL over Settlers Landing Rd																																																																		
■ SUB.B-676.100	Prepare B-676 I-64 EBL/WBL over Settlers Landing Rd Stage I Submission	15	29-Nov-22	14-Dec-22	280	CALENDAR DAY													■ Prepare B-676 I-64 EBL/WBL over Settlers Landing Rd Stage I Submission																																															
■ SUB.B-676.105	Design QA/QC & Constructability Reviews: B-676 I-64EBL/WBL over Settlers Landing Rd Stage I Submission	5	14-Dec-22	19-Dec-22	280	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: B-676 I-64EBL/WBL over Settlers Landing Rd Stage I Submission																																															
■ SUB.B-676.110	Submit Stage I: B-676 I-64 EBL/WBL over Settlers Landing Rd	0	19-Dec-22		280	CALENDAR DAY													◆ Submit Stage I: B-676 I-64 EBL/WBL over Settlers Landing Rd																																															
■ SUB.B-676.115	VDOT & FHWA Reviews and Approval	21	19-Dec-22	09-Jan-23	280	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-676.120	Prepare B-676 I-64 EBL/WBL over Settlers Landing Rd Stage II Submission	60	09-Jan-23	10-Mar-23	280	CALENDAR DAY													■ Prepare B-676 I-64 EBL/WBL over Settlers Landing Rd Stage II Submission																																															
■ SUB.B-676.125	Design QA/QC & Constructability Reviews: EBL/WBL over Settlers Landing Rd Stage II Submission	5	10-Mar-23	15-Mar-23	280	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: EBL/WBL over Settlers Landing Rd Stage II Submission																																															
■ SUB.B-676.130	Submit Stage II: EBL/WBL over Settlers Landing Rd	0		15-Mar-23	280	CALENDAR DAY													◆ Submit Stage II: EBL/WBL over Settlers Landing Rd																																															
■ SUB.B-676.135	VDOT & FHWA Reviews and Approval	21	15-Mar-23	05-Apr-23	280	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-676.140	Final Revisions, VDOT & FHWA Review & Approval B-676	21	05-Apr-23	26-Apr-23	280	CALENDAR DAY													■ Final Revisions, VDOT & FHWA Review & Approval B-676																																															
■ SUB.B-676.145	Release for Construction Plans B-676	0	14-May-23		262	CALENDAR DAY													◆ Release for Construction Plans B-676																																															
■ SUB.B-676.150	Bridge B-676 Construction Unit Cost Report < 90 Days of RFC	90	14-May-23	12-Aug-23	1199	CALENDAR DAY													■ Bridge B-676 Construction Unit Cost Report < 90 Days of RFC																																															
Bridge B-674 I-64 WBL over Hampton River																																																																		
■ SUB.B-674.100	Prepare B-674 I-64 WBL over Hampton River Stage I Submission	30	29-Nov-22	29-Dec-22	36	CALENDAR DAY													■ Prepare B-674 I-64 WBL over Hampton River Stage I Submission																																															
■ SUB.B-674.105	Design QA/QC & Constructability Reviews: B-674 I-64WBL over Hampton River Stage I Submission	21	29-Dec-22	19-Jan-23	36	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: B-674 I-64WBL over Hampton River Stage I Submission																																															
■ SUB.B-674.110	Submit Stage I: B-674 I-64 WBL over Hampton River	0	19-Jan-23		36	CALENDAR DAY													◆ Submit Stage I: B-674 I-64 WBL over Hampton River																																															
■ SUB.B-674.115	VDOT & FHWA Reviews and Approval	21	19-Jan-23	09-Feb-23	36	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-674.120	Prepare B-674 I-64 WBL over Hampton River Stage II Submission	60	09-Feb-23	10-Apr-23	54	CALENDAR DAY													■ Prepare B-674 I-64 WBL over Hampton River Stage II Submission																																															
■ SUB.B-674.125	Design QA/QC & Constructability Reviews: B-674 I-64WBL over Hampton River Stage II Submission	21	10-Apr-23	01-May-23	54	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: B-674 I-64WBL over Hampton River Stage II Submission																																															
■ SUB.B-674.130	Submit Stage II: B-674 I-64 WBL over S B-674 I-64 EBL/WBL over Hampton River	0	01-May-23		54	CALENDAR DAY													◆ Submit Stage II: B-674 I-64 WBL over S B-674 I-64 EBL/WBL over Hampton River																																															
■ SUB.B-674.135	VDOT & FHWA Reviews and Approval	21	01-May-23	22-May-23	54	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-674.140	Final Revisions, VDOT & FHWA Review & Approval B-674	30	22-May-23	21-Jun-23	54	CALENDAR DAY													■ Final Revisions, VDOT & FHWA Review & Approval B-674																																															
■ SUB.B-674.145	Release for Construction Plans B-674	0	24-Jun-23		51	CALENDAR DAY													◆ Release for Construction Plans B-674																																															
■ SUB.B-674.150	Bridge B-674 Construction Unit Cost Report < 90 Days of RFC	90	24-Jun-23	22-Sep-23	1158	CALENDAR DAY													■ Bridge B-674 Construction Unit Cost Report < 90 Days of RFC																																															
Bridge B-673 I-64 EBL over Hampton River																																																																		
■ SUB.B-673.100	Prepare B-673 I-64 EBL over Hampton River Stage I Submission	120	29-Nov-22	29-Mar-23	224	CALENDAR DAY													■ Prepare B-673 I-64 EBL over Hampton River Stage I Submission																																															
■ SUB.B-673.105	Design QA/QC & Constructability Reviews: B-673 I-64EBL over Hampton River Stage I Submission	21	29-Mar-23	19-Apr-23	224	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: B-673 I-64EBL over Hampton River Stage I Submission																																															
■ SUB.B-673.110	Submit Stage I: B-673 I-64 EBL over Hampton River	0	19-Apr-23		224	CALENDAR DAY													◆ Submit Stage I: B-673 I-64 EBL over Hampton River																																															
■ SUB.B-673.115	VDOT & FHWA Reviews and Approval	21	19-Apr-23	10-May-23	224	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-673.120	Prepare B-673 I-64 EBL/WBL over EBL over Hampton River Stage II Submission	120	10-May-23	07-Sep-23	224	CALENDAR DAY													■ Prepare B-673 I-64 EBL/WBL over EBL over Hampton River Stage II Submission																																															
■ SUB.B-673.125	Design QA/QC & Constructability Reviews: B-673 I-64EBL over Hampton River Stage II Submission	21	07-Sep-23	28-Sep-23	224	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: B-673 I-64EBL over Hampton River Stage II Submission																																															
■ SUB.B-673.130	Submit Stage II: B-673 I-64 EBL over Hampton River	0	28-Sep-23		224	CALENDAR DAY													◆ Submit Stage II: B-673 I-64 EBL over Hampton River																																															
■ SUB.B-673.135	VDOT & FHWA Reviews and Approval	21	28-Sep-23	19-Oct-23	224	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.B-673.140	Final Revisions, VDOT & FHWA Review & Approval B-673	90	19-Oct-23	17-Jan-24	224	CALENDAR DAY													■ Final Revisions, VDOT & FHWA Review & Approval B-673																																															
■ SUB.B-673.145	Release for Construction Plans B-673	0	17-Jan-24		224	CALENDAR DAY													◆ Release for Construction Plans B-673																																															
■ SUB.B-673.150	Bridge B-673 Construction Unit Cost Report < 90 Days of RFC	90	17-Jan-24	16-Apr-24	951	CALENDAR DAY													■ Bridge B-673 Construction Unit Cost Report < 90 Days of RFC																																															
WBL Retaining Walls																																																																		
■ SUB.WBRET.100	Prepare WBL Retaining Walls Preliminary Submission	21	14-Feb-23	07-Mar-23	188	CALENDAR DAY													■ Prepare WBL Retaining Walls Preliminary Submission																																															
■ SUB.WBRET.105	Design QA/QC & Constructability Reviews: WBL Retaining Walls Stage I Submission	5	07-Mar-23	12-Mar-23	188	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: WBL Retaining Walls Stage I Submission																																															
■ SUB.WBRET.110	Submit Stage I: WBL Retaining Walls	0	12-Mar-23		188	CALENDAR DAY													◆ Submit Stage I: WBL Retaining Walls																																															
■ SUB.WBRET.115	VDOT & FHWA Reviews and Approval	21	12-Mar-23	02-Apr-23	188	CALENDAR DAY													■ VDOT & FHWA Reviews and Approval																																															
■ SUB.WBRET.120	Prepare WBL Retaining Walls Stage II Submission	5	02-Apr-23	07-Apr-23	188	CALENDAR DAY													■ Prepare WBL Retaining Walls Stage II Submission																																															
■ SUB.WBRET.125	Design QA/QC & Constructability Reviews: WBL Retaining Walls Stage II Submission	21	07-Apr-23	28-Apr-23	188	CALENDAR DAY													■ Design QA/QC & Constructability Reviews: WBL Retaining Walls Stage II Submission																																															
■ SUB.WBRET.130	Submit Stage II: WBL Retaining Walls	0	28-Apr-23		188	CALENDAR DAY													◆ Submit Stage II: WBL Retaining Walls																																															

Start: 24-Jun-22
End: 10-Dec-26
Data: 24-Jun-22
Run: 11-May-22

	Critical Remaining Work		Changed Work		Delay/Impact
	Remaining Work		Remaining Level of Effort		Adverse Weather
	Actual Work		Actual Level of Effort		Additional/Extra Work

(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7

(RPT) BARCHART (11x17) | TASK filter: All Activities

Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026																		
							J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
■ SUB.USCG.160	Reviewing Agency Coordination (NOAA etc.)	110	24-Jun-22	30-Nov-22	151	SUBMITTAL DEV/REV	■ Reviewing Agency Coordination (NOAA etc.)																																																																		
■ SUB.USCG.165	Additional Information Request #1	10	27-Sep-22	10-Oct-22	151	SUBMITTAL DEV/REV	■ Additional Information Request #1																																																																		
■ SUB.USCG.170	Add Info Response by EXP	10	11-Oct-22	24-Oct-22	151	SUBMITTAL DEV/REV	■ Add Info Response by EXP																																																																		
■ SUB.USCG.175	Permit Agency Reviews Response	21	25-Oct-22	22-Nov-22	151	SUBMITTAL DEV/REV	■ Permit Agency Reviews Response																																																																		
■ SUB.USCG.180	Additional Information Request #2	5	23-Nov-22	01-Dec-22	151	SUBMITTAL DEV/REV	■ Additional Information Request #2																																																																		
■ SUB.USCG.185	Add Info Response by EXP	10	02-Dec-22	15-Dec-22	151	SUBMITTAL DEV/REV	■ Add Info Response by EXP																																																																		
■ SUB.USCG.190	Permit Agency Reviews Response	21	16-Dec-22	18-Jan-23	151	SUBMITTAL DEV/REV	■ Permit Agency Reviews Response																																																																		
■ SUB.USCG.195	Additional Information Request #3	8	19-Jan-23	30-Jan-23	151	SUBMITTAL DEV/REV	■ Additional Information Request #3																																																																		
■ SUB.USCG.200	Add Info Response by EXP	5	31-Jan-23	06-Feb-23	151	SUBMITTAL DEV/REV	■ Add Info Response by EXP																																																																		
■ SUB.USCG.205	Draft Permit Writing	21	07-Feb-23	07-Mar-23	151	SUBMITTAL DEV/REV	■ Draft Permit Writing																																																																		
■ SUB.USCG.210	Draft Permit Submitted for Review by CIV	4	08-Mar-23	13-Mar-23	151	SUBMITTAL DEV/REV	■ Draft Permit Submitted for Review by CIV																																																																		
■ SUB.USCG.215	Final Permit Writing	21	14-Mar-23	11-Apr-23	151	SUBMITTAL DEV/REV	■ Final Permit Writing																																																																		
■ SUB.USCG.220	US Coast Guard Permit Issuance	30	12-Apr-23	24-May-23	151	SUBMITTAL DEV/REV	■ US Coast Guard Permit Issuance																																																																		
■ SUB.USCG.100	Develop Permit Narrative & Drawings	20	23-Aug-23	20-Sep-23	590	SUBMITTAL DEV/REV	■ Develop Permit Narrative & Drawings																																																																		
■ SUB.USCG.105	Pre-App meeting with USCG	5	21-Sep-23	27-Sep-23	590	SUBMITTAL DEV/REV	■ Pre-App meeting with USCG																																																																		
■ SUB.USCG.110	Revise Permit Application Per Pre-App	29	28-Sep-23	07-Nov-23	590	SUBMITTAL DEV/REV	■ Revise Permit Application Per Pre-App																																																																		
■ SUB.USCG.115	GPC/CIV Review	5	08-Nov-23	14-Nov-23	590	SUBMITTAL DEV/REV	■ GPC/CIV Review																																																																		
■ SUB.USCG.120	Internal Revisions	5	15-Nov-23	21-Nov-23	590	SUBMITTAL DEV/REV	■ Internal Revisions																																																																		
■ SUB.USCG.125	VDOT Review	21	22-Nov-23	22-Dec-23	590	SUBMITTAL DEV/REV	■ VDOT Review																																																																		
■ SUB.USCG.130	Revisions to Permit a pplcation/response to VDOT	5	27-Dec-23	03-Jan-24	590	SUBMITTAL DEV/REV	■ Revisions to Permit a pplcation/response to VDOT																																																																		
■ SUB.USCG.135	Submittal to US Coast Guard	0	04-Jan-24		590	SUBMITTAL DEV/REV	■ Submittal to US Coast Guard																																																																		
■ SUB.USCG.140	Completeness Review	80	04-Jan-24	25-Apr-24	590	SUBMITTAL DEV/REV	■ Completeness Review																																																																		
■ SUB.USCG.145	Public Notice	0	26-Apr-24		590	SUBMITTAL DEV/REV	■ Public Notice																																																																		
■ SUB.USCG.150	Public Review	30	26-Apr-24	07-Jun-24	590	SUBMITTAL DEV/REV	■ Public Review																																																																		
■ SUB.USCG.155	Review Responses to Public Notice	30	10-Jun-24	22-Jul-24	590	SUBMITTAL DEV/REV	■ Review Responses to Public Notice																																																																		
===== PROJECT SUBMITTALS =====																																																																									
■ PSUB.B-659.100	Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-659)	85	19-Apr-23	13-Jul-23	414	CALENDAR DAY	■ Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-659)																																																																		
■ PSUB.B-659.105	Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-659)	85	19-Apr-23	13-Jul-23	324	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-659)																																																																		
■ PSUB.B-659.110	Prepare/Submit/Review/Approve Bridge Deck Overlay Placement Plan (B-659)	85	19-Apr-23	13-Jul-23	1026	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bridge Deck Overlay Placement Plan (B-659)																																																																		
■ PSUB.B-676.100	Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-676)	85	14-May-23	07-Aug-23	361	CALENDAR DAY	■ Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-676)																																																																		
■ PSUB.B-676.105	Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-676)	85	14-May-23	07-Aug-23	274	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-676)																																																																		
■ PSUB.B-676.110	Prepare/Submit/Review/Approve Bridge Deck/Overlay Placement Plan (B-676)	85	14-May-23	07-Aug-23	388	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bridge Deck/Overlay Placement Plan (B-676)																																																																		
■ PSUB.B-676.115	Prepare/Submit/Review/Approve Demolition Plan (B-676)	85	14-May-23	07-Aug-23	262	CALENDAR DAY	■ Prepare/Submit/Review/Approve Demolition Plan (B-676)																																																																		
■ PSUB.B-676.120	Prepare/Submit/Review/Approve Prestressed Concrete Beam Shop Drawings (B-676)	85	14-May-23	07-Aug-23	266	CALENDAR DAY	■ Prepare/Submit/Review/Approve Prestressed Concrete Beam Shop Drawings (B-676)																																																																		
■ PSUB.B-676.125	Prepare/Submit/Review/Approve Overhang/Falsework Plan (B-676)	85	14-May-23	07-Aug-23	367	CALENDAR DAY	■ Prepare/Submit/Review/Approve Overhang/Falsework Plan (B-676)																																																																		
■ PSUB.B-676.130	Prepare/Submit/Review/Approve Pile Driving QC Plan (B-676)	85	14-May-23	07-Aug-23	267	CALENDAR DAY	■ Prepare/Submit/Review/Approve Pile Driving QC Plan (B-676)																																																																		
■ PSUB.B-672.100	Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-672)	85	29-May-23	22-Aug-23	974	CALENDAR DAY	■ Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-672)																																																																		
■ PSUB.B-672.105	Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-672)	85	29-May-23	22-Aug-23	268	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-672)																																																																		
■ PSUB.B-672.110	Prepare/Submit/Review/Approve Bridge Deck/Overlay Placement Plan (B-672)	85	29-May-23	22-Aug-23	989	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bridge Deck/Overlay Placement Plan (B-672)																																																																		
■ PSUB.B-672.115	Prepare/Submit/Review/Approve Demolition Plan (B-672)	85	29-May-23	22-Aug-23	912	CALENDAR DAY	■ Prepare/Submit/Review/Approve Demolition Plan (B-672)																																																																		
■ PSUB.B-672.120	Prepare/Submit/Review/Approve Prestressed Concrete Beam Shop Drawings (B-672)	85	29-May-23	22-Aug-23	215	CALENDAR DAY	■ Prepare/Submit/Review/Approve Prestressed Concrete Beam Shop Drawings (B-672)																																																																		
■ PSUB.B-672.125	Prepare/Submit/Review/Approve Overhang/Falsework Plan (B-672)	85	29-May-23	22-Aug-23	982	CALENDAR DAY	■ Prepare/Submit/Review/Approve Overhang/Falsework Plan (B-672)																																																																		
■ PSUB.B-672.130	Prepare/Submit/Review/Approve Pile Driving QC Plan (B-672)	85	29-May-23	22-Aug-23	295	CALENDAR DAY	■ Prepare/Submit/Review/Approve Pile Driving QC Plan (B-672)																																																																		
■ PSUB.MSE.115	Prepare/Submit/Review/Approve MSE Wall Panel Shop Drawings (WB)	85	09-Jun-23	02-Sep-23	284	CALENDAR DAY	■ Prepare/Submit/Review/Approve MSE Wall Panel Shop Drawings (WB)																																																																		
■ PSUB.B-674.100	Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-674)	85	24-Jun-23	17-Sep-23	255	CALENDAR DAY	■ Prepare/Submit/Review/Approve Temporary Support/Jacking System Plan (B-674)																																																																		
■ PSUB.B-674.105	Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-674)	85	24-Jun-23	17-Sep-23	51	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-674)																																																																		
■ PSUB.B-674.110	Prepare/Submit/Review/Approve Bridge Deck/Overlay Placement Plan (B-674)	85	24-Jun-23	17-Sep-23	374	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bridge Deck/Overlay Placement Plan (B-674)																																																																		
■ PSUB.B-674.115	Prepare/Submit/Review/Approve Demolition Plan (B-674)	85	24-Jun-23	17-Sep-23	108	CALENDAR DAY	■ Prepare/Submit/Review/Approve Demolition Plan (B-674)																																																																		
■ PSUB.B-674.120	Prepare/Submit/Review/Approve Prestressed Concrete Beam Shop Drawings (B-674)	85	24-Jun-23	17-Sep-23	81	CALENDAR DAY	■ Prepare/Submit/Review/Approve Prestressed Concrete Beam Shop Drawings (B-674)																																																																		
■ PSUB.B-674.125	Prepare/Submit/Review/Approve Overhang/Falsework Plan (B-674)	85	24-Jun-23	17-Sep-23	172	CALENDAR DAY	■ Prepare/Submit/Review/Approve Overhang/Falsework Plan (B-674)																																																																		
■ PSUB.B-674.130	Prepare/Submit/Review/Approve Pile Driving QC Plan (B-674)	85	24-Jun-23	17-Sep-23	114	CALENDAR DAY	■ Prepare/Submit/Review/Approve Pile Driving QC Plan (B-674)																																																																		
■ PSUB.SOUND.105	Prepare/Submit/Review/Approve Sound Wall Shop Drawings (WB)	85	26-Jul-23	19-Oct-23	181	CALENDAR DAY	■ Prepare/Submit/Review/Approve Sound Wall Shop Drawings (WB)																																																																		
■ PSUB.MSE.110	Prepare/Submit/Review/Approve MSE Wall Panel Shop Drawings (EB)	85	03-Oct-23	27-Dec-23	546	CALENDAR DAY	■ Prepare/Submit/Review/Approve MSE Wall Panel Shop Drawings (EB)																																																																		
■ PSUB.SIGN.120	Prepare/Submit/Review/Approve Overhead Sign Structure Shop Drawings (EP)	85	14-Nov-23	07-Feb-24	74	CALENDAR DAY	■ Prepare/Submit/Review/Approve Overhead Sign Structure Shop Drawings (EP)																																																																		
■ PSUB.SOUND.100	Prepare/Submit/Review/Approve Sound Wall Shop Drawings (EB)	85	10-Dec-23	04-Mar-24	677	CALENDAR DAY	■ Prepare/Submit/Review/Approve Sound Wall Shop Drawings (EB)																																																																		
■ PSUB.B-673.105	Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-673)	85	17-Jan-24	11-Apr-24	476	CALENDAR DAY	■ Prepare/Submit/Review/Approve Bearing Pad Shop Drawings (B-673)																																																																		

Start: 24-Jun-22
 End: 10-Dec-26
 Data: 24-Jun-22
 Run: 11-May-22

- Critical Remaining Work
- Remaining Work
- Actual Work
- Changed Work
- Remaining Level of Effort
- Actual Level of Effort
- Delay/Impact
- Adverse Weather
- Additional/Extra Work

(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7

(RPT) BARCHART (11x17) | TASK filter: All Activities

Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D												J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D												J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D												J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D																							
CNST.RDA.2.WB.120	Place Asphalt Base/Binder Courses sta. 1682+50.70 to 1698+30.66 (I-64 WB)	3	09-Sep-24	11-Sep-24	18	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 1682+50.70 to 1698+30.66 (I-64 WB)																							
***** AREA 3 - KING ST. TO RIVER ST. *****																																																																		
++++ EBL +++++																																																																		
CNST.RDA.3.EB.100	Perform Milling/Excavate/Construct Embankment for Widening sta. 699+95.20 to 721+12.98 (I-64	14	09-Jan-25	29-Jan-25	153	5 @ 8 H, W																																					Perform Milling/Excavate/Construct Embankment for Widening sta. 699+																							
CNST.RDA.3.EB.105	Install Drainage from 6-14 to 8-6 sta. 699+95.20 to 721+12.98 (I-64 EB)	35	09-Apr-25	30-May-25	200	5 @ 8 H, W																																					Install Drainage from 6-14 to 8-6 sta. 699+95.20 to 721+12.9																							
CNST.RDA.3.EB.110	Place Cement Treated Subbase sta. 699+95.20 to 721+12.98 (I-64 EB)	5	02-Jun-25	06-Jun-25	242	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 699+95.20 to 721+12.9																							
CNST.RDA.3.EB.115	Place Drainage/RCC Layer sta. 699+95.20 to 721+12.98 (I-64 EB)	3	09-Jun-25	11-Jun-25	246	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 699+95.20 to 721+12.98 (I-6																							
CNST.RDA.3.EB.120	Place Asphalt Base/Binder Courses sta. 699+95.20 to 721+12.98 (I-64 EB)	3	21-Aug-25	26-Aug-25	193	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 699+95.20																							
++++ WBL +++++																																																																		
CNST.RDA.3.WB.100	Perform Milling/Excavate/Construct Embankment for Widening sta. 1700+02.68 to 1721+01.57 (I-64	14	27-Sep-23	17-Oct-23	33	5 @ 8 H, W																																					Perform Milling/Excavate/Construct Embankment for Widening sta. 1700+02.68 to 1721+01.57 (I-64 WB)																							
CNST.RDA.3.WB.105	Install Drainage from 6-11A/6-13 to 8-2/8-4 sta. 1700+02.68 to 1721+01.57 (I-64 WB)	35	01-Dec-23	30-Jan-24	89	5 @ 8 H, W																																					Install Drainage from 6-11A/6-13 to 8-2/8-4 sta. 1700+02.68 to 1721+01.57 (I-64 WB)																							
CNST.RDA.3.WB.110	Place Cement Treated Subbase sta. 1700+02.68 to 1721+01.57 (I-64 WB)	5	31-Jan-24	06-Feb-24	149	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 1700+02.68 to 1721+01.57 (I-64 WB)																							
CNST.RDA.3.WB.115	Place Drainage/RCC Layer sta. 1700+02.68 to 1721+01.57 (I-64 WB)	3	07-Feb-24	09-Feb-24	153	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 1700+02.68 to 1721+01.57 (I-64 WB)																							
CNST.RDA.3.WB.120	Place Asphalt Base/Binder Courses sta. 1700+02.68 to 1721+01.57 (I-64 WB)	3	04-Sep-24	06-Sep-24	18	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 1700+02.68 to 1721+01.57 (I-64 WB)																							
***** AREA 4 - B-673 ABUT. B1 TO BOXWOOD ST. *****																																																																		
++++ EBL +++++																																																																		
CNST.RDA.4.EB.100	Perform Milling/Excavate sta. 735+00 to 741+25 (I-64 EB)	5	30-Jan-25	05-Feb-25	220	5 @ 8 H, W																																					Perform Milling/Excavate sta. 735+00 to 741+25 (I-64 EB)																							
CNST.RDA.4.EB.105	Place Cement Treated Subbase sta. 735+00 to 741+25 (I-64 EB)	3	09-Jun-25	11-Jun-25	242	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 735+00 to 741+25 (I-64																							
CNST.RDA.4.EB.110	Place Drainage/RCC Layer sta. 735+00 to 741+25 (I-64 EB)	3	12-Jun-25	16-Jun-25	246	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 735+00 to 741+25 (I-64 EB)																							
CNST.RDA.4.EB.115	Place Asphalt Base/Binder Courses sta. 735+00 to 741+25 (I-64 EB)	3	05-Nov-25	07-Nov-25	144	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 73																							
++++ WBL +++++																																																																		
CNST.RDA.4.WB.100	Perform Milling/Excavate sta. 1735+75 to 1741+75 (I-64 WB)	5	20-Sep-23	26-Sep-23	33	5 @ 8 H, W																																					Perform Milling/Excavate sta. 1735+75 to 1741+75 (I-64 WB)																							
CNST.RDA.4.WB.105	Place Cement Treated Subbase sta. 1735+75 to 1741+75 (I-64 WB)	3	11-Dec-23	13-Dec-23	176	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 1735+75 to 1741+75 (I-64 WB)																							
CNST.RDA.4.WB.110	Place Drainage/RCC Layer sta. 1735+75 to 1741+75 (I-64 WB)	3	14-Dec-23	18-Dec-23	182	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 1735+75 to 1741+75 (I-64 WB)																							
CNST.RDA.4.WB.115	Place Asphalt Base/Binder Courses sta. 1735+75 to 1741+75 (I-64 WB)	3	18-Mar-24	21-Mar-24	126	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 1735+75 to 1741+75 (I-64 WB)																							
***** AREA 5 - B-673 ABUT. B2 TO SETTLER'S LANDING RD. *****																																																																		
++++ EBL +++++																																																																		
CNST.RDA.5.EB.100	Perform Milling/Excavate/Construct Embankment for Widening sta. 748+22.13 to 763+76.21 (I-64	7	06-Feb-25	14-Feb-25	268	5 @ 8 H, W																																					Perform Milling/Excavate/Construct Embankment for Widening sta. 748																							
CNST.RDA.5.EB.105	Install Drainage from 10-7 to 11-7 sta. 748+22.13 to 763+76.21 (I-64 EB)	35	02-Jun-25	21-Jul-25	200	5 @ 8 H, W																																					Install Drainage from 10-7 to 11-7 sta. 748+22.13 to 763																							
CNST.RDA.5.EB.110	Place Cement Treated Subbase sta. 748+22.13 to 763+76.21 (I-64 EB)	5	22-Jul-25	28-Jul-25	215	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 748+22.13 to 763																							
CNST.RDA.5.EB.115	Place Drainage/RCC Layer sta. 748+22.13 to 763+76.21 (I-64 EB)	3	29-Jul-25	31-Jul-25	217	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 748+22.13 to 763+76.2																							
CNST.RDA.5.EB.120	Place Asphalt Base/Binder Courses sta. 748+22.13 to 763+76.21 (I-64 EB)	3	10-Nov-25	12-Nov-25	144	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 74																							
++++ WBL +++++																																																																		
CNST.RDA.5.WB.100	Perform Milling/Excavate/Construct Embankment for Widening sta. 1748+77.38 to 1764+60.92 (I-64	7	11-Sep-23	19-Sep-23	33	5 @ 8 H, W																																					Perform Milling/Excavate/Construct Embankment for Widening sta. 1748+77.38 to 1764+60.92 (I-64 WB)																							
CNST.RDA.5.WB.105	Install Drainage from 10-1 to 11-6 sta. 1748+77.38 to 1764+60.92 (I-64 WB)	35	10-Oct-23	30-Nov-23	89	5 @ 8 H, W																																					Install Drainage from 10-1 to 11-6 sta. 1748+77.38 to 1764+60.92 (I-64 WB)																							
CNST.RDA.5.WB.110	Place Cement Treated Subbase sta. 1748+77.38 to 1764+60.92 (I-64 WB)	5	01-Dec-23	08-Dec-23	176	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 1748+77.38 to 1764+60.92 (I-64 WB)																							
CNST.RDA.5.WB.115	Place Drainage/RCC Layer sta. 1748+77.38 to 1764+60.92 (I-64 WB)	3	11-Dec-23	13-Dec-23	182	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 1748+77.38 to 1764+60.92 (I-64 WB)																							
CNST.RDA.5.WB.120	Place Asphalt Base/Binder Courses sta. 1748+77.38 to 1764+60.92 (I-64 WB)	3	13-Mar-24	18-Mar-24	126	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 1748+77.38 to 1764+60.92 (I-64 WB)																							
***** AREA 6 - SETTLER'S LANDING RD. TO MALLORY ST. *****																																																																		
++++ EBL +++++																																																																		
CNST.EDA.6.EB.100	Perform Milling/Excavate/Construct Embankment for Widening sta. 766+30.98 to 785+72 (I-64 EB	14	17-Feb-25	07-Mar-25	268	5 @ 8 H, W																																					Perform Milling/Excavate/Construct Embankment for Widening sta. 7																							
CNST.EDA.6.EB.105	Install Drainage from 11-21 to 13-4 sta. 766+30.98 to 785+72 (I-64 EB)	20	22-Jul-25	18-Aug-25	200	5 @ 8 H, W																																					Install Drainage from 11-21 to 13-4 sta. 766+30.98 to																							
CNST.EDA.6.EB.110	Place Cement Treated Subbase sta. 766+30.98 to 785+72 (I-64 EB)	5	19-Aug-25	25-Aug-25	200	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 766+30.98 to 7																							
CNST.EDA.6.EB.115	Place Drainage/RCC Layer sta. 766+30.98 to 785+72 (I-64 EB)	3	26-Aug-25	28-Aug-25	200	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 766+30.98 to 785+7																							
CNST.EDA.6.EB.120	Place Asphalt Base/Binder Courses sta. 766+30.98 to 785+72 (I-64 EB)	5	13-Nov-25	19-Nov-25	144	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 7																							
CNST.EDA.6.EB.125	Place Final Wearing Course sta. 766+30.98 to 785+72 (I-64 EB)	3	08-Jun-26	10-Jun-26	15	ASPHALT PAVING																																					Place Final Wearing																							
++++ WBL +++++																																																																		
CNST.RDA.6.WB.100	Perform Milling/Excavate/Construct Embankment for Widening sta. 1767+15.59 to 1786+50 (I-64	14	21-Aug-23	08-Sep-23	33	5 @ 8 H, W																																					Perform Milling/Excavate/Construct Embankment for Widening sta. 1767+15.59 to 1786+50 (I-64 WB)																							
CNST.RDA.6.WB.105	Install Drainage from 11-13/11-17 to 13-1 sta. 1767+15.59 to 1786+50 (I-64 WB)	20	11-Sep-23	09-Oct-23	89	5 @ 8 H, W																																					Install Drainage from 11-13/11-17 to 13-1 sta. 1767+15.59 to 1786+50 (I-64 WB)																							
CNST.RDA.6.WB.110	Place Cement Treated Subbase sta. 1767+15.59 to 1786+50 (I-64 WB)	5	10-Oct-23	16-Oct-23	206	5 @ 8 H, W																																					Place Cement Treated Subbase sta. 1767+15.59 to 1786+50 (I-64 WB)																							
CNST.RDA.6.WB.115	Place Drainage/RCC Layer sta. 1767+15.59 to 1786+50 (I-64 WB)	3	17-Oct-23	19-Oct-23	209	5 @ 8 H, W																																					Place Drainage/RCC Layer sta. 1767+15.59 to 1786+50 (I-64 WB)																							
CNST.RDA.6.WB.120	Place Asphalt Base/Binder Courses sta. 1767+15.59 to 1786+50 (I-64 WB)	5	20-Oct-23	26-Oct-23	209	ASPHALT PAVING																																					Place Asphalt Base/Binder Courses sta. 1767+15.59 to 1786+50 (I-64 WB)																							
CNST.RDA.6.WB.125	Place Final Wearing Course sta. 1767+15.59 to 1786+50 (I-64 WB)	3	27-Oct-23	31-Oct-23	209	ASPHALT PAVING																																					Place Final Wearing Course sta. 1767+15.59 to 1786+50 (I-64 WB)																							
***** RIVER ST PARK *****																																																																		
CNST.RD.RIVER.100	Remove/Dispose of River Street Park Kayak Launch/Dock (River St Park)	3	17-Jan-23	19-Jan-23	25	5 @ 8 H, W																																																	Remove/Dispose of River Street Park Kayak Launch/Dock (River St Park)											

Start: 24-Jun-22
End: 10-Dec-26
Data: 24-Jun-22
Run: 11-May-22

Critical Remaining Work	Changed Work	Delay/Impact
Remaining Work	Remaining Level of Effort	Adverse Weather
Actual Work	Actual Level of Effort	Additional/Extra Work

(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7

(RPT) BARCHART (11x17) | TASK filter: All Activities

Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D					
CNST.RDRIVER.105	Perform River Street Park Scoped Work (River St Park)	30	20-Jan-23	07-Mar-23	25	5 @ 8 H, W	Perform River Street Park Scoped Work (River St Park)																																																											
STRUCTURES																																																																		
B-659 / BRIDGE OVER RIP RAP RD																																																																		
EASTBOUND																																																																		
B-659.EB.WBS.SUMMAF	B-659 EB (WBS SUMMARY)	29	15-Nov-24	08-Jan-25	358	5 @ 8 H, W	B-659 EB (WBS SUMMARY)																																																											
ABUTMENT A																																																																		
B-659.EB.ABA.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment A EB)	4	04-Dec-24	09-Dec-24	349	5 @ 8 H, W	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment A EB)																																																											
B-659.EB.ABA.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment A EB)	5	10-Dec-24	16-Dec-24	349	5 @ 8 H, W	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment A EB)																																																											
B-659.EB.ABA.110	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment A EB)	3	17-Dec-24	20-Dec-24	351	5 @ 8 H, W	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment A EB)																																																											
ABUTMENT B																																																																		
B-659.EB.ABB.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment B EB)	4	10-Dec-24	13-Dec-24	350	5 @ 8 H, W	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment B EB)																																																											
B-659.EB.ABB.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment B EB)	5	17-Dec-24	31-Dec-24	349	5 @ 8 H, W	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment B EB)																																																											
B-659.EB.ABB.110	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment B EB)	3	02-Jan-25	06-Jan-25	349	5 @ 8 H, W	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment B EB)																																																											
SPAN A																																																																		
B-659.EB.SPA.100	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 EB Span A)	3	15-Nov-24	20-Nov-24	358	5 @ 8 H, W	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 EB Span A)																																																											
SPAN B																																																																		
B-659.EB.SPB.100	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 EB Span B)	3	21-Nov-24	25-Nov-24	358	5 @ 8 H, W	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 EB Span B)																																																											
SPAN C																																																																		
B-659.EB.SPC.100	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 EB Span C)	3	26-Nov-24	02-Dec-24	358	5 @ 8 H, W	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 EB Span C)																																																											
ALLSPANS																																																																		
B-659.EB.ALLSPANS.10	Scarification/Hydrodemolition of Bridge Deck (B-659 EB)	1	15-Nov-24	15-Nov-24	354	5 @ 8 H, W	Scarification/Hydrodemolition of Bridge Deck (B-659 EB)																																																											
B-659.EB.ALLSPANS.10	Perform Deck Repairs (B-659 EB)	4	19-Nov-24	22-Nov-24	379	5 @ 8 H, W	Perform Deck Repairs (B-659 EB)																																																											
B-659.EB.ALLSPANS.11	Remove Deck Concrete for Deck Joint Elimination/Place Closure Concrete (B-659 EB)	4	19-Nov-24	22-Nov-24	354	5 @ 8 H, W	Remove Deck Concrete for Deck Joint Elimination/Place Closure Concrete (B-659 EB)																																																											
B-659.EB.ALLSPANS.11	Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-659 EB)	2	02-Dec-24	03-Dec-24	273	BRIDGE DECK	Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-659 EB)																																																											
B-659.EB.ALLSPANS.12	Perform Substructure Repairs (B-659 EB)	20	03-Dec-24	08-Jan-25	358	5 @ 8 H, W	Perform Substructure Repairs (B-659 EB)																																																											
B-659.EB.ALLSPANS.12	Perform Mechanical Deck Texturing (B-659 EB)	1	04-Dec-24	04-Dec-24	376	5 @ 8 H, W	Perform Mechanical Deck Texturing (B-659 EB)																																																											
WESTBOUND																																																																		
B-659.WB.WBS.SUMMA	B-659 WB (WBS SUMMARY)	65	21-Aug-23	22-Nov-23	209	5 @ 8 H, W	B-659 WB (WBS SUMMARY)																																																											
ABUTMENT A																																																																		
B-659.WB.ABA.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment A WB)	4	28-Aug-23	31-Aug-23	243	5 @ 8 H, W	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment A WB)																																																											
B-659.WB.ABA.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment A WB)	5	01-Sep-23	08-Sep-23	243	5 @ 8 H, W	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment A WB)																																																											
B-659.WB.ABA.110	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment A WB)	3	11-Sep-23	13-Sep-23	245	5 @ 8 H, W	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment A WB)																																																											
ABUTMENT B																																																																		
B-659.WB.ABB.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment B WB)	4	01-Sep-23	07-Sep-23	244	5 @ 8 H, W	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-659 Abutment B WB)																																																											
B-659.WB.ABB.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment B WB)	5	11-Sep-23	15-Sep-23	243	5 @ 8 H, W	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-659 Abutment B WB)																																																											
B-659.WB.ABB.110	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment B WB)	3	18-Sep-23	20-Sep-23	243	5 @ 8 H, W	F/R/P Sleeper Slab/Approach Slab (B-659 Abutment B WB)																																																											
SPAN A																																																																		
B-659.WB.SPA.100	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 WB Span A)	3	12-Oct-23	16-Oct-23	209	5 @ 8 H, W	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 WB Span A)																																																											
SPAN B																																																																		
B-659.WB.SPB.100	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 WB Span B)	3	17-Oct-23	19-Oct-23	209	5 @ 8 H, W	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 WB Span B)																																																											
SPAN C																																																																		
B-659.WB.SPC.100	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 WB Span C)	3	20-Oct-23	24-Oct-23	209	5 @ 8 H, W	Setup Temporary Jacking Support System/ Jack Superstructure/Replace Bearings (B-659 WB Span C)																																																											
ALLSPANS																																																																		
B-659.WB.ALLSPANS.10	Scarification/Hydrodemolition of Bridge Deck (B-659 WB)	1	21-Aug-23	21-Aug-23	243	5 @ 8 H, W	Scarification/Hydrodemolition of Bridge Deck (B-659 WB)																																																											
B-659.WB.ALLSPANS.10	Perform Deck Repairs (B-659 WB)	4	22-Aug-23	25-Aug-23	266	5 @ 8 H, W	Perform Deck Repairs (B-659 WB)																																																											
B-659.WB.ALLSPANS.11	Remove Deck Concrete for Deck Joint Elimination/Place Closure Concrete (B-659 WB)	4	22-Aug-23	25-Aug-23	243	5 @ 8 H, W	Remove Deck Concrete for Deck Joint Elimination/Place Closure Concrete (B-659 WB)																																																											
B-659.WB.ALLSPANS.11	Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-659 WB)	2	28-Aug-23	29-Aug-23	214	BRIDGE DECK	Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-659 WB)																																																											
B-659.WB.ALLSPANS.12	Perform Mechanical Deck Texturing (B-659 WB)	1	30-Aug-23	30-Aug-23	266	5 @ 8 H, W	Perform Mechanical Deck Texturing (B-659 WB)																																																											
B-659.WB.ALLSPANS.12	Perform Substructure Repairs (B-659 WB)	20	25-Oct-23	22-Nov-23	209	5 @ 8 H, W	Perform Substructure Repairs (B-659 WB)																																																											
B-672 / BRIDGE OVER KING ST																																																																		
EASTBOUND																																																																		
B-672.EB.WBS.SUMMAF	B-672 EB (WBS SUMMARY)	99	15-Nov-24	22-Apr-25	288	5 @ 8 H, W	B-672 EB (WBS SUMMARY)																																																											
ABUTMENT A																																																																		
B-672.EB.ABA.100	Excavate/Install SOE for Foundation Widening (B-672 EB Abutment A)	4	04-Dec-24	09-Dec-24	291	5 @ 8 H, W	Excavate/Install SOE for Foundation Widening (B-672 EB Abutment A)																																																											
B-672.EB.ABA.105	Set Template & Drive Test Pile (B-672 EB Abut A)	2	10-Dec-24	11-Dec-24	291	5 @ 8 H, W	Set Template & Drive Test Pile (B-672 EB Abut A)																																																											

Start: 24-Jun-22
End: 10-Dec-26
Data: 24-Jun-22
Run: 11-May-22

- Critical Remaining Work
- Remaining Work
- Actual Work
- Changed Work
- Remaining Level of Effort
- Actual Level of Effort
- Delay/Impact
- Adverse Weather
- Additional/Extra Work

(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7

(RPT) BARCHART (11x17) | TASK filter: All Activities
Page 12 of 41

Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D												J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D												J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D												J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D																							
B-672.WB.ABB.160	Wait Period for Test Pile (B-672 WB Abut B)	5	22-Sep-23	26-Sep-23	278	CALENDAR DAY (8)																									Wait Period for Test Pile (B-672 WB Abut B)																																			
B-672.WB.ABB.165	Test Pile Re-Strike & Pile Length Det. (B-672 WB Abut B)	3	26-Sep-23	29-Sep-23	178	5 @ 8 H, W																									Test Pile Re-Strike & Pile Length Det. (B-672 WB Abut B)																																			
B-672.WB.ABB.170	Drive Production Piles (B-672 WB Abut B)	4	16-Oct-23	20-Oct-23	178	5 @ 8 H, W																									Drive Production Piles (B-672 WB Abut B)																																			
B-672.WB.ABB.120	F/R/P Cap (B-672 WB Abutment B)	6	20-Oct-23	30-Oct-23	178	5 @ 8 H, W																									F/R/P Cap (B-672 WB Abutment B)																																			
B-672.WB.ABB.140	Strip Cap (B-672 WB Abutment B)	1	30-Oct-23	31-Oct-23	178	5 @ 8 H, W																									Strip Cap (B-672 WB Abutment B)																																			
B-672.WB.ABB.125	F/R/P Stem/Wall Extension/Cure Cap (B-672 WB Abutment B)	8	31-Oct-23	13-Nov-23	178	5 @ 8 H, W																									F/R/P Stem/Wall Extension/Cure Cap (B-672 WB Abutment B)																																			
B-672.WB.ABB.130	Cure Stem/Wall (B-672 WB Abutment B)	2	13-Nov-23	15-Nov-23	280	CURE																									Cure Stem/Wall (B-672 WB Abutment B)																																			
B-672.WB.ABB.135	Strip Stem/Wall (B-672 WB Abutment B)	2	13-Nov-23	15-Nov-23	178	5 @ 8 H, W																									Strip Stem/Wall (B-672 WB Abutment B)																																			
B-672.WB.ABB.145	Place Structure Backfill (B-672 WB Abutment B)	2	15-Nov-23	17-Nov-23	178	5 @ 8 H, W																									Place Structure Backfill (B-672 WB Abutment B)																																			
B-672.WB.ABB.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-672 WB Abutment B)	4	17-Nov-23	27-Nov-23	197	5 @ 8 H, W																									Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-672 WB Abutment B)																																			
B-672.WB.ABB.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-672 WB Abutment B)	5	27-Nov-23	04-Dec-23	197	5 @ 8 H, W																									F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-672 WB Abutment B)																																			
B-672.WB.ABB.110	F/R/P Sleeper Slab/Approach Slab (B-672 WB Abutment B)	3	04-Dec-23	08-Dec-23	197	5 @ 8 H, W																									F/R/P Sleeper Slab/Approach Slab (B-672 WB Abutment B)																																			
B-672.WB.ABB.155	Widen Concrete Slope Protection (B-672 WB Abutment B)	3	08-Dec-23	13-Dec-23	197	5 @ 8 H, W																									Widen Concrete Slope Protection (B-672 WB Abutment B)																																			
SPAN A																																																																		
B-672.WB.SPA.100	Demolish/Remove Barrier/Portion of Existing Deck (B-672 WB Span A)	2	21-Aug-23	22-Aug-23	190	5 @ 8 H, W																									Demolish/Remove Barrier/Portion of Existing Deck (B-672 WB Span A)																																			
B-672.WB.SPA.125	Setup Temporary Jacking/Support System (B-672 WB Span A)	1	21-Aug-23	21-Aug-23	233	5 @ 8 H, W																									Setup Temporary Jacking/Support System (B-672 WB Span A)																																			
B-672.WB.SPA.130	Jack Span/Clean Pedestals/Perform Repairs/Replace Bearings (B-672 WB Span A)	6	21-Nov-23	30-Nov-23	171	5 @ 8 H, W																									Jack Span/Clean Pedestals/Perform Repairs/Replace Bearings (B-672 WB Span A)																																			
B-672.WB.SPA.105	Erect Precast Concrete Beam for Widening (B-672 WB Span A)	1	22-Jan-24	22-Jan-24	141	5 @ 8 H, W																									Erect Precast Concrete Beam for Widening (B-672 WB Span A)																																			
B-672.WB.SPA.110	Set Overhangs (B-672 WB Span A)	1	23-Jan-24	23-Jan-24	141	5 @ 8 H, W																									Set Overhangs (B-672 WB Span A)																																			
B-672.WB.SPA.115	Set Deck Pans (B-672 WB Span A)	1	24-Jan-24	24-Jan-24	141	5 @ 8 H, W																									Set Deck Pans (B-672 WB Span A)																																			
B-672.WB.SPA.120	Place Deck Rebar (B-672 WB Span A)	1	25-Jan-24	25-Jan-24	141	5 @ 8 H, W																									Place Deck Rebar (B-672 WB Span A)																																			
B-672.WB.SPA.135	Remove Overhangs (B-672 WB Span A)	2	09-Apr-24	10-Apr-24	118	5 @ 8 H, W																									Remove Overhangs (B-672 WB Span A)																																			
SPAN B																																																																		
B-672.WB.SPB.100	Demolish/Remove Barrier/Portion of Existing Deck (B-672 WB Span B)	2	23-Aug-23	24-Aug-23	190	5 @ 8 H, W																									Demolish/Remove Barrier/Portion of Existing Deck (B-672 WB Span B)																																			
B-672.WB.SPB.125	Setup Temporary Jacking/Support System (B-672 WB Span B)	1	01-Dec-23	01-Dec-23	171	5 @ 8 H, W																									Setup Temporary Jacking/Support System (B-672 WB Span B)																																			
B-672.WB.SPB.130	Jack Span/Clean Pedestals/Perform Repairs/Replace Bearings (B-672 WB Span B)	6	04-Dec-23	12-Dec-23	171	5 @ 8 H, W																									Jack Span/Clean Pedestals/Perform Repairs/Replace Bearings (B-672 WB Span B)																																			
B-672.WB.SPB.105	Erect Precast Concrete Beam for Widening (B-672 WB Span B)	1	23-Jan-24	23-Jan-24	141	5 @ 8 H, W																									Erect Precast Concrete Beam for Widening (B-672 WB Span B)																																			
B-672.WB.SPB.110	Set Overhangs (B-672 WB Span B)	1	24-Jan-24	24-Jan-24	141	5 @ 8 H, W																									Set Overhangs (B-672 WB Span B)																																			
B-672.WB.SPB.115	Set Deck Pans (B-672 WB Span B)	1	25-Jan-24	25-Jan-24	141	5 @ 8 H, W																									Set Deck Pans (B-672 WB Span B)																																			
B-672.WB.SPB.120	Place Deck Rebar (B-672 WB Span B)	1	26-Jan-24	26-Jan-24	141	5 @ 8 H, W																									Place Deck Rebar (B-672 WB Span B)																																			
B-672.WB.SPB.135	Remove Overhangs (B-672 WB Span B)	2	11-Apr-24	12-Apr-24	118	5 @ 8 H, W																									Remove Overhangs (B-672 WB Span B)																																			
SPAN C																																																																		
B-672.WB.SPC.100	Demolish/Remove Barrier/Portion of Existing Deck (B-672 WB Span C)	2	25-Aug-23	28-Aug-23	190	5 @ 8 H, W																									Demolish/Remove Barrier/Portion of Existing Deck (B-672 WB Span C)																																			
B-672.WB.SPC.125	Setup Temporary Jacking/Support System (B-672 WB Span C)	1	13-Dec-23	13-Dec-23	171	5 @ 8 H, W																									Setup Temporary Jacking/Support System (B-672 WB Span C)																																			
B-672.WB.SPC.130	Jack Span/Clean Pedestals/Perform Repairs/Replace Bearings (B-672 WB Span C)	6	14-Dec-23	21-Dec-23	171	5 @ 8 H, W																									Jack Span/Clean Pedestals/Perform Repairs/Replace Bearings (B-672 WB Span C)																																			
B-672.WB.SPC.105	Erect Precast Concrete Beam for Widening (B-672 WB Span C)	1	24-Jan-24	24-Jan-24	141	5 @ 8 H, W																									Erect Precast Concrete Beam for Widening (B-672 WB Span C)																																			
B-672.WB.SPC.110	Set Overhangs (B-672 WB Span C)	1	25-Jan-24	25-Jan-24	141	5 @ 8 H, W																									Set Overhangs (B-672 WB Span C)																																			
B-672.WB.SPC.115	Set Deck Pans (B-672 WB Span C)	1	26-Jan-24	26-Jan-24	141	5 @ 8 H, W																									Set Deck Pans (B-672 WB Span C)																																			
B-672.WB.SPC.120	Place Deck Rebar (B-672 WB Span C)	1	29-Jan-24	29-Jan-24	141	5 @ 8 H, W																									Place Deck Rebar (B-672 WB Span C)																																			
B-672.WB.SPC.135	Remove Overhangs (B-672 WB Span C)	2	16-Apr-24	17-Apr-24	118	5 @ 8 H, W																									Remove Overhangs (B-672 WB Span C)																																			
ALLSPANS																																																																		
B-672.WB.ALLSPANS.12	Perform Substructure Repairs (B-672 WB)	20	22-Dec-23	29-Jan-24	171	5 @ 8 H, W																									Perform Substructure Repairs (B-672 WB)																																			
B-672.WB.ALLSPANS.12	Setup Bidwell/Place Deck (B-672 WB Allspans)	5	11-Mar-24	15-Mar-24	114	BRIDGE DECK																									Setup Bidwell/Place Deck (B-672 WB Allspans)																																			
B-672.WB.ALLSPANS.13	Bridge Deck Curing (B-672 WB Allspans)	7	15-Mar-24	22-Mar-24	175	CURE																									Bridge Deck Curing (B-672 WB Allspans)																																			
B-672.WB.ALLSPANS.13	F/R/P Bridge Barrier (B-672 WB Allspans)	10	25-Mar-24	05-Apr-24	114	5 @ 8 H, W																									F/R/P Bridge Barrier (B-672 WB Allspans)																																			
B-672.WB.ALLSPANS.1C	Scarification/Hydrodemolition of Bridge Deck (B-672 WB)	1	09-Apr-24	09-Apr-24	114	5 @ 8 H, W																									Scarification/Hydrodemolition of Bridge Deck (B-672 WB)																																			
B-672.WB.ALLSPANS.1C	Perform Deck Repairs (B-672 WB)	6	10-Apr-24	18-Apr-24	114	5 @ 8 H, W																									Perform Deck Repairs (B-672 WB)																																			
B-672.WB.ALLSPANS.11	Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-672 WB)	2	19-Apr-24	22-Apr-24	114	BRIDGE DECK																									Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-672 WB)																																			
B-672.WB.ALLSPANS.11	Perform Mechanical Deck Texturing (B-672 WB)	1	23-Apr-24	23-Apr-24	114	5 @ 8 H, W																									Perform Mechanical Deck Texturing (B-672 WB)																																			
***** B-673 / EASTBOUND BRIDGE OVER HAMPTON RIVER *****																																																																		
B-673.EB.WBS.SUMMARY	B-673 EB (WBS SUMMARY)	378	15-Nov-24	05-Jun-26	97	5 @ 8 H, W																																																	B-673.EB.(WBS.SUMMARY)											
+++++ EXISTING B-617 (OVER HAMPTON RIVER) SUBSTRUCTURE +++++																																																																		
B-617.SHIELD.100	Setup Underdeck Shielding over River Street (B-617 EB Span 2)	5	15-Nov-24	22-Nov-24	176	5 @ 8 H, W																																																	Setup Underdeck Shielding over River Street (B-617 EB Span 2)											
B-617.SHIELD.105	Setup Underdeck Shielding over E Pembroke Ave (B-617 EB Spans 6/7)	5	25-Nov-24	03-Dec-24	176	5 @ 8 H, W																																																	Setup Underdeck Shielding over E Pembroke Ave (B-617 EB Spans 6/7)											
B-617.ABB.100	Demolish Abutment B (B-617 Abutment B)	5	03-Jan-25	09-Jan-25	3	5 @ 8 H, W																																																	Demolish Abutment B (B-617 Abutment B)											
B-617.TRESTLE.100	Construct Trestle (B-617 Abutment B to Pier 21)	8	10-Jan-25	21-Jan-25	3	5 @ 8 H, W																																																	Construct Trestle (B-617 Abutment B to Pier 21)											

Start: 24-Jun-22
End: 10-Dec-26
Data: 24-Jun-22
Run: 11-May-22

Critical Remaining Work	Changed Work	Delay/Impact
Remaining Work	Remaining Level of Effort	Adverse Weather
Actual Work	Actual Level of Effort	Additional/Extra Work

(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7

(RPT) BARCHART (11x17) | TASK filter: All Activities
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Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J J A S O N D J J F M A M J J A S O N D J J F M A M J J A S O N D J J F M A M J J A S O N D J J F M A M J J A S O N D																																																											
B-618.TRESTLE.105	Remove Trestle (B-618 Waterway Span)	4	12-May-25	15-May-25	272	5 @ 8 H, W	Remove Trestle (B-618 Waterway Span)																																																											
+++++ EXISTING B-618 (OVER BOXWOOD ST) SUPERSTRUCTURE +++++																																																																		
B-618.SHIELD.100	Setup Underdeck Shielding over Boxwood Street (B-618 EB Span 1)	5	15-Nov-24	22-Nov-24	195	5 @ 8 H, W	Setup Underdeck Shielding over Boxwood Street (B-618 EB Span 1)																																																											
B-618.SP1.100	Demolish/Remove Deck/Steel/Remove Underdeck Shielding (B-618 EB Span 1)	6	25-Nov-24	04-Dec-24	195	5 @ 8 H, W	Demolish/Remove Deck/Steel/Remove Underdeck Shielding (B-618 EB Span 1)																																																											
B-618.SP2.100	Demolish/Remove Deck/Steel (B-618 EB Span 2)	5	05-Dec-24	11-Dec-24	322	5 @ 8 H, W	Demolish/Remove Deck/Steel (B-618 EB Span 2)																																																											
B-618.SP3.100	Demolish/Remove Deck/Steel (B-618 EB Span 3)	5	12-Dec-24	19-Dec-24	322	5 @ 8 H, W	Demolish/Remove Deck/Steel (B-618 EB Span 3)																																																											
B-618.SP4.100	Demolish/Remove Deck/Steel (B-618 EB Span 4)	5	20-Dec-24	03-Jan-25	322	5 @ 8 H, W	Demolish/Remove Deck/Steel (B-618 EB Span 4)																																																											
B-618.SP5.100	Demolish/Remove Deck/Steel (B-618 EB Span 5)	5	06-Jan-25	10-Jan-25	322	5 @ 8 H, W	Demolish/Remove Deck/Steel (B-618 EB Span 5)																																																											
B-618.SP6.100	Demolish/Remove Deck/Steel (B-618 EB Span 6)	5	13-Jan-25	17-Jan-25	322	5 @ 8 H, W	Demolish/Remove Deck/Steel (B-618 EB Span 6)																																																											
B-618.SP7.100	Demolish/Remove Deck/Steel (B-618 EB Span 7)	5	20-Jan-25	27-Jan-25	322	5 @ 8 H, W	Demolish/Remove Deck/Steel (B-618 EB Span 7)																																																											
B-618.SP8.100	Demolish/Remove Deck/Steel (B-618 EB Span 8)	5	28-Jan-25	03-Feb-25	322	5 @ 8 H, W	Demolish/Remove Deck/Steel (B-618 EB Span 8)																																																											
+++++ NEW SUBSTRUCTURE +++++																																																																		
~~~~~ ABUTMENT A1 ~~~~~																																																																		
B-673.ABA1.100	Excavate/Install SOE for Abutment (B-673 EB Abutment A1)	4	02-May-25	07-May-25	183	5 @ 8 H, W	Excavate/Install SOE for Abutment (B-673 EB Abutment A1)																																																											
B-673.ABA1.110	Set Template & Drive Test Pile (B-673 EB Abut A1)	2	02-Jun-25	03-Jun-25	167	5 @ 8 H, W	Set Template & Drive Test Pile (B-673 EB Abut A1)																																																											
B-673.ABA1.115	Wait Period for Test Pile (B-673 EB Abut A1)	5	04-Jun-25	08-Jun-25	248	CALENDAR DAY (8)	Wait Period for Test Pile (B-673 EB Abut A1)																																																											
B-673.ABA1.120	Test Pile Re-Strike & Pile Length Det. (B-673 EB Abut A1)	3	09-Jun-25	11-Jun-25	168	5 @ 8 H, W	Test Pile Re-Strike & Pile Length Det. (B-673 EB Abut A1)																																																											
B-673.ABA1.125	Set Template & Drive Production Piles (B-673 EB Abut A1)	4	27-Jun-25	03-Jul-25	166	5 @ 8 H, W	Set Template & Drive Production Piles (B-673 EB Abut A1)																																																											
B-673.ABA1.130	F/R/P Cap (B-673 EB Abutment A1)	6	03-Jul-25	14-Jul-25	166	5 @ 8 H, W	F/R/P Cap (B-673 EB Abutment A1)																																																											
B-673.ABA1.135	Cure/Strip Cap (B-673 EB Abutment A1)	4	14-Jul-25	18-Jul-25	166	5 @ 8 H, W	Cure/Strip Cap (B-673 EB Abutment A1)																																																											
B-673.ABA1.140	F/R/P Stem/Wall (B-673 EB Abutment A1)	10	18-Jul-25	01-Aug-25	166	5 @ 8 H, W	F/R/P Stem/Wall (B-673 EB Abutment A1)																																																											
B-673.ABA1.145	Cure/Strip Stem/Wall (B-673 EB Abutment A1)	5	01-Aug-25	08-Aug-25	166	5 @ 8 H, W	Cure/Strip Stem/Wall (B-673 EB Abutment A1)																																																											
B-673.ABA1.150	Place Structure Backfill (B-673 EB Abutment A1)	4	08-Aug-25	14-Aug-25	166	5 @ 8 H, W	Place Structure Backfill (B-673 EB Abutment A1)																																																											
B-673.ABA1.155	F/R/P Sleeper/Approach Slab (B-673 EB Abutment A1)	5	14-Aug-25	21-Aug-25	196	5 @ 8 H, W	F/R/P Sleeper/Approach Slab (B-673 EB Abutment A1)																																																											
B-673.ABA1.160	Place Concrete Slope Protection (B-673 Abutment A1)	5	14-Aug-25	21-Aug-25	204	5 @ 8 H, W	Place Concrete Slope Protection (B-673 Abutment A1)																																																											
~~~~~ BENT 1 ~~~~~																																																																		
B-673.B1.100	Set Template & Drive Test Pile (B-673 EB Bent 1)	2	29-May-25	30-May-25	165	5 @ 8 H, W	Set Template & Drive Test Pile (B-673 EB Bent 1)																																																											
B-673.B1.105	Wait Period for Test Pile (B-673 EB Bent 1)	5	31-May-25	04-Jun-25	246	CALENDAR DAY (8)	Wait Period for Test Pile (B-673 EB Bent 1)																																																											
B-673.B1.110	Test Pile Re-Strike & Pile Length Det. (B-673 EB Bent 1)	3	04-Jun-25	09-Jun-25	166	5 @ 8 H, W	Test Pile Re-Strike & Pile Length Det. (B-673 EB Bent 1)																																																											
B-673.B1.115	Set Template & Drive Production Piles (B-673 EB Bent 1)	4	23-Jun-25	27-Jun-25	166	5 @ 8 H, W	Set Template & Drive Production Piles (B-673 EB Bent 1)																																																											
B-673.B1.120	F/R/P Cap (B-673 EB Bent 1)	6	27-Jun-25	08-Jul-25	182	5 @ 8 H, W	F/R/P Cap (B-673 EB Bent 1)																																																											
B-673.B1.125	Cure/Strip Cap (B-673 EB Bent 1)	4	08-Jul-25	14-Jul-25	182	5 @ 8 H, W	Cure/Strip Cap (B-673 EB Bent 1)																																																											
~~~~~ BENT 2 ~~~~~																																																																		
B-673.B2.100	Set Template & Drive Production Piles (B-673 EB Bent 2)	5	21-May-25	28-May-25	122	5 @ 8 H, W	Set Template & Drive Production Piles (B-673 EB Bent 2)																																																											
B-673.B2.105	F/R/P Cap (B-673 EB Bent 2)	6	29-May-25	05-Jun-25	122	5 @ 8 H, W	F/R/P Cap (B-673 EB Bent 2)																																																											
B-673.B2.110	Cure/Strip Cap (B-673 EB Bent 2)	4	06-Jun-25	11-Jun-25	122	5 @ 8 H, W	Cure/Strip Cap (B-673 EB Bent 2)																																																											
~~~~~ BENT 3 ~~~~~																																																																		
B-673.B3.100	Construct Trestle (B-673 EB Shore to Bent 3)	8	02-May-25	13-May-25	122	5 @ 8 H, W	Construct Trestle (B-673 EB Shore to Bent 3)																																																											
B-673.B3.105	Set Template & Drive Production Piles (B-673 EB Bent 3)	5	14-May-25	20-May-25	122	5 @ 8 H, W	Set Template & Drive Production Piles (B-673 EB Bent 3)																																																											
B-673.B3.110	F/R/P Cap (B-673 EB Bent 3)	6	21-May-25	29-May-25	125	5 @ 8 H, W	F/R/P Cap (B-673 EB Bent 3)																																																											
B-673.B3.115	Cure/Strip Cap (B-673 EB Bent 3)	4	30-May-25	04-Jun-25	125	5 @ 8 H, W	Cure/Strip Cap (B-673 EB Bent 3)																																																											
~~~~~ BENT 4 ~~~~~																																																																		
B-673.B4.100	Set Template & Drive Test Pile (B-673 EB Bent 4)	2	11-Jul-25	15-Jul-25	65	5 @ 8 H, W	Set Template & Drive Test Pile (B-673 EB Bent 4)																																																											
B-673.B4.105	Wait Period for Test Pile (B-673 EB Bent 4)	5	16-Jul-25	20-Jul-25	92	CALENDAR DAY (8)	Wait Period for Test Pile (B-673 EB Bent 4)																																																											
B-673.B4.110	Test Pile Re-Strike & Pile Length Det. (B-673 EB Bent 4)	3	21-Jul-25	23-Jul-25	65	5 @ 8 H, W	Test Pile Re-Strike & Pile Length Det. (B-673 EB Bent 4)																																																											
B-673.B4.115	Set Template & Drive Production Piles (B-673 EB Bent 4)	4	07-Aug-25	12-Aug-25	65	5 @ 8 H, W	Set Template & Drive Production Piles (B-673 EB Bent 4)																																																											
B-673.B4.120	F/R/P Cap (B-673 EB Bent 4)	6	13-Aug-25	20-Aug-25	65	5 @ 8 H, W	F/R/P Cap (B-673 EB Bent 4)																																																											
B-673.B4.125	Cure/Strip Cap (B-673 EB Bent 4)	4	21-Aug-25	26-Aug-25	65	5 @ 8 H, W	Cure/Strip Cap (B-673 EB Bent 4)																																																											
~~~~~ BENT 5 ~~~~~																																																																		
B-673.B5.100	Set Template & Drive Production Piles (B-673 EB Bent 5)	5	03-Jul-25	11-Jul-25	65	5 @ 8 H, W	Set Template & Drive Production Piles (B-673 EB Bent 5)																																																											
B-673.B5.105	F/R/P Cap (B-673 EB Bent 5)	6	11-Jul-25	21-Jul-25	85	5 @ 8 H, W	F/R/P Cap (B-673 EB Bent 5)																																																											
B-673.B5.110	Cure/Strip Cap (B-673 EB Bent 5)	4	21-Jul-25	25-Jul-25	85	5 @ 8 H, W	Cure/Strip Cap (B-673 EB Bent 5)																																																											
~~~~~ BENT 6 ~~~~~																																																																		
B-673.B6.100	Set Template & Drive Test Pile (B-673 EB Bent 6)	2	04-Jun-25	05-Jun-25	64	5 @ 8 H, W	Set Template & Drive Test Pile (B-673 EB Bent 6)																																																											
B-673.B6.105	Wait Period for Test Pile (B-673 EB Bent 6)	5	06-Jun-25	10-Jun-25	93	CALENDAR DAY (8)	Wait Period for Test Pile (B-673 EB Bent 6)																																																											
B-673.B6.110	Test Pile Re-Strike & Pile Length Det. (B-673 EB Bent 6)	3	10-Jun-25	13-Jun-25	65	5 @ 8 H, W	Test Pile Re-Strike & Pile Length Det. (B-673 EB Bent 6)																																																											

Start: 24-Jun-22  
 End: 10-Dec-26  
 Data: 24-Jun-22  
 Run: 11-May-22

Critical Remaining Work	Changed Work	Delay/Impact
Remaining Work	Remaining Level of Effort	Adverse Weather
Actual Work	Actual Level of Effort	Additional/Extra Work

**(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7**

(RPT) BARCHART (11x17) | TASK filter: All Activities







Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026																																																																							
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B-673.B20.125	Cure/Strip Cap (B-673 EB Bent 20)	4	14-May-25	19-May-25	220	5 @ 8 H, W																																																													Cure/Strip Cap (B-673 EB Bent 20)																																																											
<b>ABUTMENT B2</b>																																																																																																																														
B-673.ABB2.100	Excavate/Install SOE for Abutment (B-673 EB Abutment B2)	4	16-Dec-24	20-Dec-24	201	5 @ 8 H, W																																																													Excavate/Install SOE for Abutment (B-673 EB Abutment B2)																																																											
B-673.ABB2.105	Set Template & Drive Test Pile (B-673 EB Abut B2)	2	08-Jan-25	09-Jan-25	195	5 @ 8 H, W																																																													Set Template & Drive Test Pile (B-673 EB Abut B2)																																																											
B-673.ABB2.110	Wait Period for Test Pile (B-673 EB Abut B2)	5	10-Jan-25	14-Jan-25	393	CALENDAR DAY (8)																																																													Wait Period for Test Pile (B-673 EB Abut B2)																																																											
B-673.ABB2.115	Test Pile Re-Strike & Pile Length Det. (B-673 EB Abut B2)	3	30-Apr-25	02-May-25	195	5 @ 8 H, W																																																													Test Pile Re-Strike & Pile Length Det. (B-673 EB Abut B2)																																																											
B-673.ABB2.120	Drive Production Piles (B-673 EB Abut B2)	4	19-May-25	22-May-25	195	5 @ 8 H, W																																																													Drive Production Piles (B-673 EB Abut B2)																																																											
B-673.ABB2.125	F/R/P Cap (B-673 EB Abutment B2)	6	23-May-25	02-Jun-25	195	5 @ 8 H, W																																																													F/R/P Cap (B-673 EB Abutment B2)																																																											
B-673.ABB2.130	Cure/Strip Cap (B-673 EB Abutment B2)	4	03-Jun-25	06-Jun-25	195	5 @ 8 H, W																																																													Cure/Strip Cap (B-673 EB Abutment B2)																																																											
B-673.ABB2.135	F/R/P Stem/Wall (B-673 EB Abutment B2)	10	09-Jun-25	20-Jun-25	195	5 @ 8 H, W																																																													F/R/P Stem/Wall (B-673 EB Abutment B2)																																																											
B-673.ABB2.140	Cure/Strip Stem/Wall (B-673 EB Abutment B2)	5	23-Jun-25	27-Jun-25	195	5 @ 8 H, W																																																													Cure/Strip Stem/Wall (B-673 EB Abutment B2)																																																											
B-673.ABB2.145	Place Structure Backfill (B-673 EB Abutment B2)	4	30-Jun-25	03-Jul-25	195	5 @ 8 H, W																																																													Place Structure Backfill (B-673 EB Abutment B2)																																																											
B-673.ABB2.150	F/R/P Sleeper/Approach Slab (B-673 EB Abutment B2)	5	07-Jul-25	11-Jul-25	214	5 @ 8 H, W																																																													F/R/P Sleeper/Approach Slab (B-673 EB Abutment B2)																																																											
B-673.ABB2.155	Approach Slab Cure (B-673 EB Abutment B2)	7	11-Jul-25	18-Jul-25	315	CURE																																																													Approach Slab Cure (B-673 EB Abutment B2)																																																											
<b>++++ NEW SUPERSTRUCTURE ++++</b>																																																																																																																														
<b>SPAN A (OVER RIVER ST.)</b>																																																																																																																														
B-673.SPA.100	Set Bearing Pads/Erect Precast Concrete Beams (B-673 EB Span A)	2	10-Dec-25	11-Dec-25	86	5 @ 8 H, W																																																													Set Bearing Pads/Erect Precast Concrete																																																											
B-673.SPA.105	Set Overhangs (B-673 EB Span A)	7	30-Mar-26	08-Apr-26	16	5 @ 8 H, W																																																													Set Overhangs (B-673 EB Span A)																																																											
B-673.SPA.110	Set Deck Pans (B-673 EB Span A)	7	09-Apr-26	17-Apr-26	16	5 @ 8 H, W																																																													Set Deck Pans (B-673 EB Span A)																																																											
B-673.SPA.115	Place Deck Rebar (B-673 EB Span A)	6	20-Apr-26	27-Apr-26	16	5 @ 8 H, W																																																													Place Deck Rebar (B-673 EB Span A)																																																											
B-673.SPA.120	Setup Bidwell/Place Bridge Deck Concrete (B-673 EB Span A)	2	28-Apr-26	29-Apr-26	16	BRIDGE DECK																																																													Setup Bidwell/Place Bridge Deck Concrete																																																											
B-673.SPA.125	Cure Bridge Deck (B-673 EB Span A)	7	29-Apr-26	06-May-26	23	CURE																																																													Cure Bridge Deck (B-673 EB Span A)																																																											
B-673.SPA.130	Remove Overhangs (B-673 EB Span A)	5	01-Jun-26	05-Jun-26	9	5 @ 8 H, W																																																													Remove Overhangs (B-673 EB Span A)																																																											
<b>SPAN B</b>																																																																																																																														
B-673.SPB.100	Set Bearing Pads/Erect Precast Concrete Beams (B-673 EB Span B)	2	08-Dec-25	09-Dec-25	81	5 @ 8 H, W																																																													Set Bearing Pads/Erect Precast Concrete																																																											
B-673.SPB.105	Set Overhangs (B-673 EB Span B)	7	19-Mar-26	27-Mar-26	16	5 @ 8 H, W																																																													Set Overhangs (B-673 EB Span B)																																																											
B-673.SPB.110	Set Deck Pans (B-673 EB Span B)	7	30-Mar-26	08-Apr-26	16	5 @ 8 H, W																																																													Set Deck Pans (B-673 EB Span B)																																																											
B-673.SPB.115	Place Deck Rebar (B-673 EB Span B)	6	09-Apr-26	16-Apr-26	17	5 @ 8 H, W																																																													Place Deck Rebar (B-673 EB Span B)																																																											
B-673.SPB.120	Setup Bidwell/Place Bridge Deck Concrete (B-673 EB Span B)	2	17-Apr-26	20-Apr-26	21	BRIDGE DECK																																																													Setup Bidwell/Place Bridge Deck Concrete																																																											
B-673.SPB.125	Cure Bridge Deck (B-673 EB Span B)	7	20-Apr-26	27-Apr-26	32	CURE																																																													Cure Bridge Deck (B-673 EB Span B)																																																											
B-673.SPB.130	Remove Overhangs (B-673 EB Span B)	5	22-May-26	29-May-26	9	5 @ 8 H, W																																																													Remove Overhangs (B-673 EB Span B)																																																											
<b>SPAN C</b>																																																																																																																														
B-673.SPC.100	Set Bearing Pads/Erect Precast Concrete Beams (B-673 EB Span C)	2	04-Dec-25	05-Dec-25	1	5 @ 8 H, W																																																													Set Bearing Pads/Erect Precast Concrete																																																											
B-673.SPC.105	Set Overhangs (B-673 EB Span C)	7	10-Mar-26	18-Mar-26	16	5 @ 8 H, W																																																													Set Overhangs (B-673 EB Span C)																																																											
B-673.SPC.110	Set Deck Pans (B-673 EB Span C)	7	19-Mar-26	27-Mar-26	16	5 @ 8 H, W																																																													Set Deck Pans (B-673 EB Span C)																																																											
B-673.SPC.115	Place Deck Rebar (B-673 EB Span C)	6	30-Mar-26	07-Apr-26	18	5 @ 8 H, W																																																													Place Deck Rebar (B-673 EB Span C)																																																											
B-673.SPC.120	Setup Bidwell/Place Bridge Deck Concrete (B-673 EB Span C)	2	09-Apr-26	10-Apr-26	25	BRIDGE DECK																																																													Setup Bidwell/Place Bridge Deck Concrete																																																											
B-673.SPC.125	Cure Bridge Deck (B-673 EB Span C)	7	10-Apr-26	17-Apr-26	42	CURE																																																													Cure Bridge Deck (B-673 EB Span C)																																																											
B-673.SPC.130	Remove Overhangs (B-673 EB Span C)	5	15-May-26	21-May-26	9	5 @ 8 H, W																																																													Remove Overhangs (B-673 EB Span C)																																																											
<b>SPAN D (OVER PEMBROKE AVE.)</b>																																																																																																																														
B-673.SPD.100	Set Bearing Pads/Erect Precast Concrete Beams (B-673 EB Span D)	2	02-Dec-25	03-Dec-25	1	5 @ 8 H, W																																																													Set Bearing Pads/Erect Precast Concrete																																																											
B-673.SPD.105	Set Overhangs (B-673 EB Span D)	7	27-Feb-26	09-Mar-26	16	5 @ 8 H, W																																																													Set Overhangs (B-673 EB Span D)																																																											
B-673.SPD.110	Set Deck Pans (B-673 EB Span D)	7	10-Mar-26	18-Mar-26	16	5 @ 8 H, W																																																													Set Deck Pans (B-673 EB Span D)																																																											
B-673.SPD.115	Place Deck Rebar (B-673 EB Span D)	6	19-Mar-26	26-Mar-26	19	5 @ 8 H, W																																																													Place Deck Rebar (B-673 EB Span D)																																																											
B-673.SPD.120	Setup Bidwell/Place Bridge Deck Concrete (B-673 EB Span D)	2	07-Apr-26	08-Apr-26	25	BRIDGE DECK																																																													Setup Bidwell/Place Bridge Deck Concrete																																																											
B-673.SPD.125	Cure Bridge Deck (B-673 EB Span D)	7	08-Apr-26	15-Apr-26	44	CURE																																																													Cure Bridge Deck (B-673 EB Span D)																																																											
B-673.SPD.130	Remove Overhangs (B-673 EB Span D)	5	08-May-26	14-May-26	9	5 @ 8 H, W																																																													Remove Overhangs (B-673 EB Span D)																																																											
<b>SPAN E</b>																																																																																																																														
B-673.SPE.100	Set Bearing Pads/Erect Precast Concrete Beams (B-673 EB Span E)	2	26-Nov-25	01-Dec-25	1	5 @ 8 H, W																																																													Set Bearing Pads/Erect Precast Concrete																																																											
B-673.SPE.105	Set Overhangs (B-673 EB Span E)	7	18-Feb-26	26-Feb-26	16	5 @ 8 H, W																																																													Set Overhangs (B-673 EB Span E)																																																											
B-673.SPE.110	Set Deck Pans (B-673 EB Span E)	7	27-Feb-26	09-Mar-26	16	5 @ 8 H, W																																																													Set Deck Pans (B-673 EB Span E)																																																											
B-673.SPE.115	Place Deck Rebar (B-673 EB Span E)	6	10-Mar-26	17-Mar-26	20	5 @ 8 H, W																																																													Place Deck Rebar (B-673 EB Span E)																																																											
B-673.SPE.120	Setup Bidwell/Place Bridge Deck Concrete (B-673 EB Span E)	2	02-Apr-26	06-Apr-26	25	BRIDGE DECK																																																													Setup Bidwell/Place Bridge Deck Concrete																																																											
B-673.SPE.125	Cure Bridge Deck (B-673 EB Span E)	7	06-Apr-26	13-Apr-26	46	CURE																																																													Cure Bridge Deck (B-673 EB Span E)																																																											
B-673.SPE.130	Remove Overhangs (B-673 EB Span E)	5	01-May-26	07-May-26	9	5 @ 8 H, W																																																													Remove Overhangs (B-673 EB Span E)																																																											
<b>SPAN F</b>																																																																																																																														

Start: 24-Jun-22  
End: 10-Dec-26  
Data: 24-Jun-22  
Run: 11-May-22

Critical Remaining Work	Changed Work	Delay/Impact
Remaining Work	Remaining Level of Effort	Adverse Weather
Actual Work	Actual Level of Effort	Additional/Extra Work

**(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7**

(RPT) BARCHART (11x17) | TASK filter: All Activities





















































Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D					
++++ EASTBOUND ++++																																																																		
B-676.EB.WBS.SUMMAF	B-676 EB (WBS SUMMARY)	32	15-Nov-24	13-Jan-25	356	5 @ 8 H, W																																					B-676 EB (WBS SUMMARY)																							
~~~~~ ABUTMENT A ~~~~~																																																																		
B-676.EB.ABA.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-676 Abutment A EB)	4	04-Dec-24	09-Dec-24	362	5 @ 8 H, W																																					Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-676 Abutment A EB)																							
B-676.EB.ABA.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-676 Abutment A EB)	5	10-Dec-24	16-Dec-24	362	5 @ 8 H, W																																					F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-676 Abutment A EB)																							
B-676.EB.ABA.110	F/R/P Sleeper Slab/Approach Slab (B-676 Abutment A EB)	2	17-Dec-24	19-Dec-24	365	5 @ 8 H, W																																					F/R/P Sleeper Slab/Approach Slab (B-676 Abutment A EB)																							
~~~~~ ABUTMENT B ~~~~~																																																																		
B-676.EB.ABB.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-676 Abutment B EB)	4	10-Dec-24	13-Dec-24	363	5 @ 8 H, W																																					Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-676 Abutment B EB)																							
B-676.EB.ABB.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-676 Abutment B EB)	5	17-Dec-24	31-Dec-24	362	5 @ 8 H, W																																					F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-676 Abutment B EB)																							
B-676.EB.ABB.110	F/R/P Sleeper Slab/Approach Slab (B-676 Abutment B EB)	2	02-Jan-25	03-Jan-25	362	5 @ 8 H, W																																					F/R/P Sleeper Slab/Approach Slab (B-676 Abutment B EB)																							
~~~~~ SPAN A ~~~~~																																																																		
B-676.EB.SPA.100	Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings (B-676 EB Span A)	3	15-Nov-24	20-Nov-24	355	5 @ 8 H, W																																					Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings																							
~~~~~ SPAN B ~~~~~																																																																		
B-676.EB.SP.B.100	Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings (B-676 EB Span B)	3	21-Nov-24	25-Nov-24	355	5 @ 8 H, W																																					Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings																							
~~~~~ SPAN C ~~~~~																																																																		
B-676.EB.SP.C.100	Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings (B-676 EB Span C)	3	26-Nov-24	02-Dec-24	355	5 @ 8 H, W																																					Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings																							
~~~~~ SPAN D ~~~~~																																																																		
B-676.EB.SP.D.100	Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings (B-676 EB Span C)	3	03-Dec-24	05-Dec-24	355	5 @ 8 H, W																																					Setup Temporary Jacking Support System/Jack Superstructure/Replace Bearings																							
~~~~~ ALLSPANS ~~~~~																																																																		
B-676.EB.ALLSPANS.10X	Scarification/Hydrodemolition of Bridge Deck (B-676 EB)	1	15-Nov-24	15-Nov-24	367	5 @ 8 H, W																																					Scarification/Hydrodemolition of Bridge Deck (B-676 EB)																							
B-676.EB.ALLSPANS.10E	Perform Deck Repairs (B-676 EB)	4	19-Nov-24	22-Nov-24	379	5 @ 8 H, W																																					Perform Deck Repairs (B-676 EB)																							
B-676.EB.ALLSPANS.11C	Remove Deck Concrete for Deck Joint Elimination/Place Closure Concrete (B-676 EB)	4	19-Nov-24	22-Nov-24	367	5 @ 8 H, W																																					Remove Deck Concrete for Deck Joint Elimination/Place Closure Concrete (B-676 EB)																							
B-676.EB.ALLSPANS.11E	Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-676 EB)	2	02-Dec-24	03-Dec-24	273	BRIDGE DECK																																					Setup Bidwell/Place Latex Concrete Bridge Deck Overlay (B-676 EB)																							
B-676.EB.ALLSPANS.12C	Perform Mechanical Deck Texturing (B-676 EB)	1	04-Dec-24	04-Dec-24	376	5 @ 8 H, W																																					Perform Mechanical Deck Texturing (B-676 EB)																							
B-676.EB.ALLSPANS.12E	Perform Substructure Repairs (B-676 EB)	20	06-Dec-24	13-Jan-25	355	5 @ 8 H, W																																					Perform Substructure Repairs (B-676 EB)																							
++++ WESTBOUND ++++																																																																		
B-676.WB.WBS.SUMMA	B-676 WB (WBS SUMMARY)	168	08-Aug-23	23-Apr-24	114	5 @ 8 H, W																									B-676 WB (WBS SUMMARY)																																			
~~~~~ ABUTMENT A ~~~~~																																																																		
B-676.WB.ABA.150	Excavate/Install SOE for Foundation Widening (B-676 WB Abutment A)	4	21-Aug-23	24-Aug-23	159	5 @ 8 H, W																																					Excavate/Install SOE for Foundation Widening (B-676 WB Abutment A)																							
B-676.WB.ABA.115	Set Template & Drive Test Pile (B-676 WB Abut A)	2	25-Aug-23	28-Aug-23	159	5 @ 8 H, W																																					Set Template & Drive Test Pile (B-676 WB Abut A)																							
B-676.WB.ABA.160	Wait Period for Test Pile (B-676 WB Abut A)	5	29-Aug-23	02-Sep-23	247	CALENDAR DAY (8)																																					Wait Period for Test Pile (B-676 WB Abut A)																							
B-676.WB.ABA.165	Test Pile Re-Strike & Pile Length Det. (B-676 WB Abut A)	3	05-Sep-23	07-Sep-23	158	5 @ 8 H, W																																					Test Pile Re-Strike & Pile Length Det. (B-676 WB Abut A)																							
B-676.WB.ABA.170	Drive Production Piles (B-676 WB Abut A)	4	22-Sep-23	27-Sep-23	158	5 @ 8 H, W																																					Drive Production Piles (B-676 WB Abut A)																							
B-676.WB.ABA.120	F/R/P Cap (B-676 WB Abutment A)	6	28-Sep-23	05-Oct-23	158	5 @ 8 H, W																																					F/R/P Cap (B-676 WB Abutment A)																							
B-676.WB.ABA.140	Strip Cap (B-676 Abutment A)	1	09-Oct-23	09-Oct-23	181	5 @ 8 H, W																																					Strip Cap (B-676 Abutment A)																							
B-676.WB.ABA.125	F/R/P Stem/Wall Extension/Cure Cap (B-676 WB Abutment A)	8	13-Nov-23	22-Nov-23	158	5 @ 8 H, W																																					F/R/P Stem/Wall Extension/Cure Cap (B-676 WB Abutment A)																							
B-676.WB.ABA.130	Cure Stem/Wall (B-676 WB Abutment A)	2	22-Nov-23	24-Nov-23	255	CURE																																					Cure Stem/Wall (B-676 WB Abutment A)																							
B-676.WB.ABA.135	Strip Stem/Wall (B-676 WB Abutment A)	2	27-Nov-23	28-Nov-23	160	5 @ 8 H, W																																					Strip Stem/Wall (B-676 WB Abutment A)																							
B-676.WB.ABA.145	Place Structure Backfill (B-676 WB Abutment A)	2	29-Nov-23	30-Nov-23	160	5 @ 8 H, W																																					Place Structure Backfill (B-676 WB Abutment A)																							
B-676.WB.ABA.100	Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-676 WB Abutment A)	4	01-Dec-23	07-Dec-23	191	5 @ 8 H, W																																					Excavate/Install SOE for Deck Extension Retrofit/Approach Slab (B-676 WB Abutment A)																							
B-676.WB.ABA.105	F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-676 WB Abutment A)	5	08-Dec-23	14-Dec-23	192	5 @ 8 H, W																																					F/R/P Retrofit for Deck Extension/Buried Approach Slabs (B-676 WB Abutment A)																							
B-676.WB.ABA.110	F/R/P Sleeper Slab/Approach Slab (B-676 WB Abutment A)	2	15-Dec-23	18-Dec-23	192	5 @ 8 H, W																																					F/R/P Sleeper Slab/Approach Slab (B-676 WB Abutment A)																							
B-676.WB.ABA.155	Widen Concrete Slope Protection (B-676 WB Abutment A)	1	19-Dec-23	19-Dec-23	192	5 @ 8 H, W																																					Widen Concrete Slope Protection (B-676 WB Abutment A)																							
~~~~~ PIER 1 ~~~~~																																																																		
B-676.WB.P1.100	Set Template & Drive Test Pile (B-676 WB Pier 1)	2	29-Aug-23	30-Aug-23	163	5 @ 8 H, W																																					Set Template & Drive Test Pile (B-676 WB Pier 1)																							
B-676.WB.P1.120	Wait Period for Test Pile (B-676 WB Pier 1)	5	31-Aug-23	04-Sep-23	254	CALENDAR DAY (8)																																					Wait Period for Test Pile (B-676 WB Pier 1)																							
B-676.WB.P1.125	Test Pile Re-Strike & Pile Length Det. (B-676 WB Pier 1)	3	05-Sep-23	07-Sep-23	164	5 @ 8 H, W																																					Test Pile Re-Strike & Pile Length Det. (B-676 WB Pier 1)																							
B-676.WB.P1.130	Drive Production Piles (B-676 WB Pier 1)	4	22-Sep-23	27-Sep-23	164	5 @ 8 H, W																																					Drive Production Piles (B-676 WB Pier 1)																							
B-676.WB.P1.105	F/R/P Cap (B-676 WB Pier 1)	6	09-Oct-23	16-Oct-23	158	5 @ 8 H, W																																					F/R/P Cap (B-676 WB Pier 1)																							
B-676.WB.P1.110	Cure Cap (B-676 WB Pier 1)	5	16-Oct-23	21-Oct-23	291	CURE																																					Cure Cap (B-676 WB Pier 1)																							
B-676.WB.P1.115	Strip Cap (B-676 WB Pier 1)	1	17-Oct-23	17-Oct-23	189	5 @ 8 H, W																																					Strip Cap (B-676 WB Pier 1)																							
~~~~~ PIER 2 ~~~~~																																																																		
B-676.WB.P2.100	Drive Production Piles (B-676 WB Pier 2)	3	31-Aug-23	05-Sep-23	170	5 @ 8 H, W																																					Drive Production Piles (B-676 WB Pier 2)																							
B-676.WB.P2.105	F/R/P Cap (B-676 WB Pier 2)	6	17-Oct-23	24-Oct-23	158	5 @ 8 H, W																																					F/R/P Cap (B-676 WB Pier 2)																							
B-676.WB.P2.110	Cure Cap (B-676 WB Pier 2)	5	24-Oct-23	29-Oct-23	288	CURE																																					Cure Cap (B-676 WB Pier 2)																							
B-676.WB.P2.115	Strip Cap (B-676 WB Pier 2)	1	25-Oct-23	25-Oct-23	186	5 @ 8 H, W																																					Strip Cap (B-676 WB Pier 2)																							

Start: 24-Jun-22  
 End: 10-Dec-26  
 Data: 24-Jun-22  
 Run: 11-May-22

Critical Remaining Work	Changed Work	Delay/Impact
Remaining Work	Remaining Level of Effort	Adverse Weather
Actual Work	Actual Level of Effort	Additional/Extra Work

**(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7**

(RPT) BARCHART (11x17) | TASK filter: All Activities


















Activity ID	Activity Name	OD	ES	EF	TF	CALENDAR	2022												2023												2024												2025												2026											
							J J A S O N D J J F M A M J J A S O N D J J F M A M J J A S O N D J J F M A M J J A S O N D J J F M A M J J A S O N D																																																											
EBW6L.110	Place MSE Wall Panels/MSE Structure Backfill sta. 735+77 to 737+50 EB (EBW6L)	20	09-Dec-25	13-Jan-26	71	5 @ 8 H, W																																																	Place MSE Wall Panels/MSE Structure Backfill sta. 735+77 to 737+50 EB (EBW6L)											
EBW6L.115	F/R/P Moment Slabs/Traffic Barrier Base/MSE Wall Top sta. 735+77 to 737+50 EB (EBW6L)	33	14-Jan-26	27-Feb-26	71	5 @ 8 H, W																																																	F/R/P Moment Slabs/Traffic Barrier Base/MSE Wall Top sta. 735+77 to 737+50 EB (EBW6L)											
EBW6L.120	Slipform Traffic Barrier sta. 735+77 to 739+00 EB (EBW6L)	2	02-Mar-26	03-Mar-26	71	5 @ 8 H, W																																																	Slipform Traffic Barrier sta. 735+77 to 739+00 EB (EBW6L)											
EBW6L.125	Install Traffic Barrier Mounted Soundwall Posts and Panels sta. 735+77 to 739+00 EB (EBW6L)	4	04-Mar-26	09-Mar-26	71	5 @ 8 H, W																																																	Install Traffic Barrier Mounted Soundwall Posts and Panels sta. 735+77 to 739+00 EB (EBW6L)											
<b>***** EBW7 GRAVITY RETAINING WALL *****</b>																																																																		
EBW7.100	Excavate for Retaining Wall Foundation/ Place Aggregate Base sta. 749+31 to 758+00 EB (EBW7)	9	12-Mar-25	25-Mar-25	257	5 @ 8 H, W																																																	Excavate for Retaining Wall Foundation/ Place Aggregate Base sta. 749+31 to 758+00 EB (EBW7)											
EBW7.105	F/R/P Gravity Wall Base sta. 749+31 to 758+00 EB (EBW7)	29	19-Mar-25	01-May-25	279	5 @ 8 H, W																																																	F/R/P Gravity Wall Base sta. 749+31 to 758+00 EB (EBW7)											
EBW7.110	Slipform Traffic Barrier sta. 749+31 to 758+00 EB (EBW7)	1	04-Mar-26	04-Mar-26	72	5 @ 8 H, W																																																	Slipform Traffic Barrier sta. 749+31 to 758+00 EB (EBW7)											
<b>***** EBW8 GRAVITY RETAINING WALL *****</b>																																																																		
EBW8.100	Excavate for Retaining Wall Foundation/ Place Aggregate Base sta. 773+00 to 785+72 EB (EBW8)	13	26-Mar-25	11-Apr-25	257	5 @ 8 H, W																																																	Excavate for Retaining Wall Foundation/ Place Aggregate Base sta. 773+00 to 785+72 EB (EBW8)											
EBW8.105	F/R/P Gravity Wall Base sta. 773+00 to 785+72 EB (EBW8)	43	02-Apr-25	04-Jun-25	257	5 @ 8 H, W																																																	F/R/P Gravity Wall Base sta. 773+00 to 785+72 EB (EBW8)											
EBW8.110	Slipform Traffic Barrier sta. 773+00 to 785+72 EB (EBW8)	2	05-Mar-26	06-Mar-26	72	5 @ 8 H, W																																																	Slipform Traffic Barrier sta. 773+00 to 785+72 EB (EBW8)											
<b>***** WBW1 GRAVITY RETAINING/SOUND WALL *****</b>																																																																		
WBW1.110	Excavate for Retaining Wall Foundation sta. 1692+50 to 1698+13 WB (WBW1)	6	24-Oct-23	31-Oct-23	33	5 @ 8 H, W																																																	Excavate for Retaining Wall Foundation sta. 1692+50 to 1698+13 WB (WBW1)											
WBW1.115	F/R/P Gravity Wall Base sta. 1692+50 to 1698+13 WB (WBW1)	19	27-Oct-23	27-Nov-23	33	5 @ 8 H, W																																																	F/R/P Gravity Wall Base sta. 1692+50 to 1698+13 WB (WBW1)											
WBW1.120	Slipform Traffic Barrier sta. 1692+50 to 1698+13 WB (WBW1)	1	28-Nov-23	28-Nov-23	33	5 @ 8 H, W																																																	Slipform Traffic Barrier sta. 1692+50 to 1698+13 WB (WBW1)											
WBW1.125	Install Traffic Barrier Mounted Soundwall Posts and Panels sta. 1692+50 to 1698+13 WB (WBW1)	5	29-Nov-23	05-Dec-23	33	5 @ 8 H, W																																																	Install Traffic Barrier Mounted Soundwall Posts and Panels sta. 1692+50 to 1698+13 WB (WBW1)											
WBW1.100	Drill/Set Ground Mounted Sound Wall Posts sta. 1662+00 to 1692+00 WB (WBW1)	31	29-Jan-24	13-Mar-24	119	5 @ 8 H, W																																																	Drill/Set Ground Mounted Sound Wall Posts sta. 1662+00 to 1692+00 WB (WBW1)											
WBW1.105	Install Ground Mounted Sound Wall Panels sta. 1662+00 to 1692+00 WB (WBW1)	11	28-Feb-24	13-Mar-24	119	5 @ 8 H, W																																																	Install Ground Mounted Sound Wall Panels sta. 1662+00 to 1692+00 WB (WBW1)											
<b>***** WBW2 GRAVITY/MSE RETAINING/SOUND WALL *****</b>																																																																		
WBW2.110	Excavate for Retaining Wall Foundation sta. 1720+56 to 1700+01 WB (WBW2)	21	07-Dec-23	12-Jan-24	33	5 @ 8 H, W																																																	Excavate for Retaining Wall Foundation sta. 1720+56 to 1700+01 WB (WBW2)											
WBW2.115	F/R/P Gravity Wall Base sta. 1720+56 to 1700+01 WB (WBW2)	54	12-Dec-23	07-Mar-24	33	5 @ 8 H, W																																																	F/R/P Gravity Wall Base sta. 1720+56 to 1700+01 WB (WBW2)											
WBW2.120	F/P Leveling Pad sta. 1716+50 to 1720+56 WB (WBW2)	8	08-Mar-24	19-Mar-24	33	5 @ 8 H, W																																																	F/P Leveling Pad sta. 1716+50 to 1720+56 WB (WBW2)											
WBW2.125	Place MSE Wall Panels/MSE Structure Backfill sta. 1716+50 to 1720+56 WB (WBW2)	53	20-Mar-24	07-Jun-24	33	5 @ 8 H, W																																																	Place MSE Wall Panels/MSE Structure Backfill sta. 1716+50 to 1720+56 WB (WBW2)											
WBW2.130	F/R/P Moment Slabs/Traffic Barrier Base/MSE Wall Top sta. 1716+50 to 1720+56 WB (WBW2)	27	10-Jun-24	18-Jul-24	33	5 @ 8 H, W																																																	F/R/P Moment Slabs/Traffic Barrier Base/MSE Wall Top sta. 1716+50 to 1720+56 WB (WBW2)											
WBW2.135	Slipform Traffic Barrier sta. 1720+56 to 1700+01 WB (WBW2)	2	22-Jul-24	23-Jul-24	33	5 @ 8 H, W																																																	Slipform Traffic Barrier sta. 1720+56 to 1700+01 WB (WBW2)											
WBW2.140	Install Traffic Barrier Mounted Soundwall Posts and Panels sta. 1720+56 to 1700+01 WB (WBW2)	9	24-Jul-24	05-Aug-24	33	5 @ 8 H, W																																																	Install Traffic Barrier Mounted Soundwall Posts and Panels sta. 1720+56 to 1700+01 WB (WBW2)											
<b>***** WBW3 MSE RETAINING WALL *****</b>																																																																		
WBW3.100	Excavate for Retaining Wall Foundation sta. 1748+77 to 1750+00 WB (WBW3)	2	15-Jan-24	16-Jan-24	162	5 @ 8 H, W																																																	Excavate for Retaining Wall Foundation sta. 1748+77 to 1750+00 WB (WBW3)											
WBW3.105	F/P Leveling Pad sta. 1748+77 to 1750+00 WB (WBW3)	1	17-Jan-24	17-Jan-24	162	5 @ 8 H, W																																																	F/P Leveling Pad sta. 1748+77 to 1750+00 WB (WBW3)											
WBW3.110	Place MSE Wall Panels/MSE Structure Backfill sta. 1748+77 to 1750+00 WB (WBW3)	5	18-Jan-24	25-Jan-24	162	5 @ 8 H, W																																																	Place MSE Wall Panels/MSE Structure Backfill sta. 1748+77 to 1750+00 WB (WBW3)											
WBW3.115	F/R/P Moment Slabs/Traffic Barrier Base/MSE Wall Top sta. 1748+77 to 1750+00 WB (WBW3)	9	26-Jan-24	07-Feb-24	162	5 @ 8 H, W																																																	F/R/P Moment Slabs/Traffic Barrier Base/MSE Wall Top sta. 1748+77 to 1750+00 WB (WBW3)											
WBW3.125	Drill/Set Ground Mounted Sound Wall Posts sta. 1771+50 to 1774+00 (WBW3)	3	14-Mar-24	18-Mar-24	125	5 @ 8 H, W																																																	Drill/Set Ground Mounted Sound Wall Posts sta. 1771+50 to 1774+00 (WBW3)											
WBW3.120	Slipform Traffic Barrier sta. 1748+77 to 1750+00 WB (WBW3)	1	24-Jul-24	24-Jul-24	53	5 @ 8 H, W																																																	Slipform Traffic Barrier sta. 1748+77 to 1750+00 WB (WBW3)											
WBW3.130	Install Ground Mounted Sound Wall Panels sta. 1771+50 to 1774+00 (WBW3)	11	06-Aug-24	21-Aug-24	33	5 @ 8 H, W																																																	Install Ground Mounted Sound Wall Panels sta. 1771+50 to 1774+00 (WBW3)											
<b>***** WBW4 GRAVITY RETAINING/SOUND WALL *****</b>																																																																		
WBW4.100	Excavate for Retaining Wall Foundation sta. 1774+50 to 1775+00 WB (WBW4)	1	17-Jan-24	17-Jan-24	168	5 @ 8 H, W																																																	Excavate for Retaining Wall Foundation sta. 1774+50 to 1775+00 WB (WBW4)											
WBW4.115	Drill/Set Ground Mounted Sound Wall Posts sta. 1775+50 to 1779+50 (WBW4)	5	18-Jan-24	25-Jan-24	171	5 @ 8 H, W																																																	Drill/Set Ground Mounted Sound Wall Posts sta. 1775+50 to 1779+50 (WBW4)											
WBW4.105	F/R/P Gravity Wall Base sta. 1774+50 to 1775+00 WB (WBW4)	2	23-Jan-24	24-Jan-24	173	5 @ 8 H, W																																																	F/R/P Gravity Wall Base sta. 1774+50 to 1775+00 WB (WBW4)											
WBW4.110	Slipform Traffic Barrier sta. 1774+50 to 1775+00 WB (WBW4)	1	25-Jul-24	25-Jul-24	53	5 @ 8 H, W																																																	Slipform Traffic Barrier sta. 1774+50 to 1775+00 WB (WBW4)											
WBW4.120	Install Ground Mounted Sound Wall Panels sta. 1775+50 to 1779+50 (WBW4)	2	22-Aug-24	23-Aug-24	33	5 @ 8 H, W																																																	Install Ground Mounted Sound Wall Panels sta. 1775+50 to 1779+50 (WBW4)											
<b>===== ITS/TOLLING/ELECTRICAL =====</b>																																																																		
ITS.WB.100	Install Electrical/ITS Conduits/Infrastructure (I-64 WB)	100	21-Aug-23	24-Jan-24	24	5 @ 8 H, W																																																	Install Electrical/ITS Conduits/Infrastructure (I-64 WB)											
ITS.WB.105	Install Tolling Conduits/Infrastructure (I-64 WB)	100	16-Nov-23	23-Apr-24	24	5 @ 8 H, W																																																	Install Tolling Conduits/Infrastructure (I-64 WB)											
ITS.WB.110	Install DMS/Poles/Cameras/Cabinets (I-64 WB)	100	09-Apr-24	06-Sep-24	24	5 @ 8 H, W																																																	Install DMS/Poles/Cameras/Cabinets (I-64 WB)											
ITS.EB.100	Install Electrical/ITS Conduits/Infrastructure (I-64 EB)	100	15-Nov-24	23-Apr-25	87	5 @ 8 H, W																																																	Install Electrical/ITS Conduits/Infrastructure (I-64 EB)											
ITS.EB.105	Install Tolling Conduits/Infrastructure (I-64 EB)	100	25-Apr-25	16-Sep-25	87	5 @ 8 H, W																																																	Install Tolling Conduits/Infrastructure (I-64 EB)											
ITS.EB.110	Install DMS/Poles/Cameras/Cabinets (I-64 EB)	100	17-Sep-25	13-Feb-26	87	5 @ 8 H, W																																																	Install DMS/Poles/Cameras/Cabinets (I-64 EB)											
<b>===== OVERHEAD SIGNS =====</b>																																																																		
SIGNS.WB.100	Remove Overhead Signs (I-64 WB)	30	21-Aug-23	02-Oct-23	214	5 @ 8 H, W																																																	Remove Overhead Signs (I-64 WB)											
SIGNS.WB.105	Install Overhead Sign Structures/Signs (I-64 WB)	30	17-Jun-24	31-Jul-24	49	5 @ 8 H, W																																																	Install Overhead Sign Structures/Signs (I-64 WB)											
SIGNS.EB.110	Remove Overhead Signs (I-64 EB)	30	15-Nov-24	09-Jan-25	327	5 @ 8 H, W																																																	Remove Overhead Signs (I-64 EB)											
SIGNS.EB.115	Install Overhead Sign Structures/Signs (I-64 EB)	30	10-Jan-25	21-Feb-25	327	5 @ 8 H, W																																																	Install Overhead Sign Structures/Signs (I-64 EB)											

Start: 24-Jun-22  
 End: 10-Dec-26  
 Data: 24-Jun-22  
 Run: 11-May-22

 Critical Remaining Work	 Changed Work	 Delay/Impact
 Remaining Work	 Remaining Level of Effort	 Adverse Weather
 Actual Work	 Actual Level of Effort	 Additional/Extra Work

**(22HH002) VDOT I-64 SEGMENT 4C BID SCHEDULE.V7**

(RPT) BARCHART (11x17) | TASK filter: All Activities





# Appendix I: Forms



**ATTACHMENT 3.6.6**

**ALTERNATIVE TECHNICAL CONCEPT (ATC) RESPONSE FORM**

**ATC ID NUMBER:** 01

**ATC NAME-DESCRIPTION:** I-64 EB Bridge over Hampton River Pier 9 Extension

**OFFEROR:** Wagman-Fay JV

**DATE ATC SUBMITTED:** 02/25/2022

- (A) The proposed ATC is acceptable for inclusion in the Proposal with such conditions, modifications and/or requirements as identified by VDOT in Attachment 1 of this response.
- (B) The ATC is not acceptable for inclusion in the Proposal.
- (C) The submittal does not qualify as an ATC but may be included in the Offeror's Proposal because it appears to be within the requirements of the RFP.

*Janet Hedrick 3/16/22*

Signed: _____  
Janet M. Hedrick, PE, DBIA

**DATE OF ATC RESPONSE:** March 17, 2022

**ATTACHMENT 3.6.6 (cont.)**

**ALTERNATIVE TECHNICAL CONCEPT (ATC) RESPONSE FORM**

**ATC ID NUMBER:** 01

**ATC NAME-DESCRIPTION:** I-64 EB Bridge over Hampton River Pier 9 Extension

**OFFEROR:** Wagman-Fay JV

**DATE ATC SUBMITTED:** 02/25/2022

**ATTACHMENT 1**

1. The final design shall provide minimum clearances in accordance with the graphic submitted with the ATC. The Design-Builder shall be responsible for documenting and submitting a design waiver for the proposed variances from the Zone of Intrusion requirements identified in Section 15.02-1 of the VDOT Structure and Bridge Manual prior to submitting stage 1 report.
2. Beam spacing and overhangs shall meet the RFP requirements.
3. Details for joining the existing and new cap shall be shown in the Stage 1 report. These details shall at a minimum include general dimensions, proposed bar layout, demolition (if required) and temporary support details (if required). Grouted reinforcement in tension will require design approval of the Department. Please note that the Department in its sole discretion may approve or reject such design approval request.
4. Minimum pile spacing between existing and proposed piles shall be 3 x diameter or side dimension of piles.
5. Reinforcement in cap and columns shall be CRR Steel Class I according to IIM-81.
6. Design approval will be required for modifications of joint details for the kinked joint. Joint shall be sized to meet the requirements of proposed skew and shall be perpendicular to the parapet.
7. For variable length girders, the deflections of the beams shall have similar deflections and a refined analysis shall be required.



**ATTACHMENT 3.6.7**  
**LIST OF APPROVED ATCs INCLUDED IN TECHNICAL PROPOSAL**

**OFFEROR:**

List all approved ATCs included in the Technical Proposal along with the page number references from Technical Proposal.

ATC ID Number	ATC Name Description	Date ATC Approved	Technical Proposal Reference Page(s) #
ATC 1	I-64 EB Bridge over Hampton River Pier 9 Extension	March 17, 2022	14, 15, 16, 17, 72

**By signing this document, the Offeror hereby confirms that they are agreeing to all conditions that may have accompanied the ATC approval(s). The Offerors shall make a note of RFP Part 4 Section 2.1.10**

*"If the Contract Documents incorporate any ATCs and Design-Builder, for whatever reason: (a) does not comply with one or more Department conditions of pre-approval for the ATC; (b) does not obtain required third-party approval for the ATC; or (c) fails to implement the ATC, then Design-Builder shall: (1) provide written notice thereof to Department; and (2) comply with the requirements in the Contract Documents that would have applied in the absence of such ATC. Such compliance shall be without any increase in the Contract Price or extension to the Contract Time(s). For the avoidance of doubt, Design-Builder shall not be entitled to any increase in the Contract Price or extension of the Contract Time(s) as a result of any delay, inability or cost associated with the acquisition of any property that may be required to implement any ATC."*

  
 [Signature: Offerors POC or Principal Officer]

Glen K. Mays

[Printed Name]

Vice President & General Manager  
 [Title]

DATE: May 10, 2022

**ATTACHMENT 3.7**

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF TRANSPORTATION**

**RFP NO.**                    C00117841DB111  
**PROJECT NO.:**        0064-114-374 P101, R201, C501

**ACKNOWLEDGEMENT OF RFP, REVISION AND/OR ADDENDA**

Acknowledgement shall be made of receipt of the Request for Proposals (RFP) and/or any and all revisions and/or addenda pertaining to the above designated project which are issued by the Department prior to the Letter of Submittal submission date shown herein. Failure to include this acknowledgement in the Letter of Submittal may result in the rejection of your proposal.

By signing this Attachment 3.7, the Offeror acknowledges receipt of the RFP and/or following revisions and/or addenda to the RFP for the above designated project which were issued under cover letter(s) of the date(s) shown hereon:

- |    |                 |                                                      |
|----|-----------------|------------------------------------------------------|
| 1. | Cover letter of | <u>RFP – November 10, 2021</u><br>(Date)             |
| 2. | Cover letter of | <u>RFP Addendum #1 - December 17,2021</u><br>(Date)  |
| 3. | Cover letter of | <u>RFP Addendum #2 - January 25, 2022</u><br>(Date)  |
| 4. | Cover letter of | <u>RFP Addendum #3 – February 15, 2022</u><br>(Date) |
| 5. | Cover letter of | <u>RFP Addendum #4 – March 28, 2022</u><br>(Date)    |
| 6. | Cover letter of | <u>RFP Addendum #5 – April 15, 2022</u><br>(Date)    |
| 7. | Cover letter of | <u>RFP Addendum #6 – April 26, 2022</u><br>(Date)    |

  
 _____  
 SIGNATURE

May 9, 2022  
 _____  
 DATE

Glen K. Mays  
 _____  
 PRINTED NAME

Vice President & General Manager  
 _____  
 TITLE



**ATTACHMENT 9.3.1**  
**PROPOSAL PAYMENT AGREEMENT**

**THIS PROPOSAL PAYMENT AGREEMENT** (this “Agreement”) is made and entered into as of this 29th day of April, 2022, by and between the Virginia Department of Transportation (“VDOT”), and Wagman Fay SE a Joint Venture (“Offeror”).

**WITNESSETH:**

**WHEREAS**, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”) pursuant to VDOT’s April 30., 2021 Request for Qualifications (“RFQ”) and was invited to submit proposals in response to a Request for Proposals (“RFP”) for the **I-64 Hampton Roads Express Lanes (HREL) Segment 4C, Project No. 0064-114-374 P101, R201, C501** (“Project”), under a design-build contract with VDOT (“Design-Build Contract”); and

**WHEREAS**, as part of the procurement process for the Project, Offeror has already provided and/or furnished to VDOT, and may continue to provide and/or furnish to VDOT, certain intellectual property, materials, information and ideas, including, but not limited to, such matters that are: (a) conveyed verbally and in writing during proprietary meetings or interviews; and (b) contained in, related to or associated with Offeror’s proposal, including, but not limited to, written correspondence, designs, drawings, plans, exhibits, photographs, reports, printed material, tapes, electronic disks, or other graphic and visual aids (collectively “Offeror’s Intellectual Property”); and

**WHEREAS**, VDOT is willing to provide a payment to Offeror, subject to the express conditions stated in this Agreement, to obtain certain rights in Offeror’s Intellectual Property, provided that Offeror submits a proposal that VDOT determines to be responsive to the RFP (“Offeror’s Proposal”), and either (a) Offeror is not awarded the Design-Build Contract; or (b) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror; and

**WHEREAS**, Offeror wishes to receive the payment offered by VDOT, in exchange for granting VDOT the rights set forth in this Agreement.

**NOW, THEREFORE**, in consideration of the mutual covenants and agreements set forth in this Agreement and other good and valuable consideration, the receipt and adequacy of which are acknowledged by the parties, the parties agree as follows:



**1. VDOT's Rights in Offeror's Intellectual Property.** Offeror hereby conveys to VDOT all rights, title and interest, free and clear of all liens, claims and encumbrances, in Offeror's Intellectual Property, which includes, without restriction or limitation, the right of VDOT, and anyone contracting with VDOT, to incorporate any ideas or information from Offeror's Intellectual Property into: (a) the Design-Build Contract and the Project; (b) any other contract awarded in reference to the Project; or (c) any subsequent procurement by VDOT. In receiving all rights, title and interest in Offeror's Intellectual Property, VDOT is deemed to own all intellectual property rights, copyrights, patents, trade secrets, trademarks, and service marks in Offeror's Intellectual Property, and Offeror agrees that it shall, at the request of VDOT, execute all papers and perform all other acts that may be necessary to ensure that VDOT's rights, title and interest in Offeror's Intellectual Property are protected. The rights conferred herein to VDOT include, without limitation, VDOT's ability to use Offeror's Intellectual Property without the obligation to notify or seek permission from Offeror.

**2. Exclusions from Offeror's Intellectual Property.** Notwithstanding Section 1 above, it is understood and agreed that Offeror's Intellectual Property is not intended to include, and Offeror does not convey any rights to, the Escrow Proposal Documents submitted by Offeror in accordance with the RFP.

**3. Proposal Payment.** VDOT agrees to pay Offeror the lump sum amount of **Three Hundred Thousand and 00/100 Dollars (\$300,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

**4. Payment Due Date.** Subject to the conditions set forth in this Agreement, VDOT will make payment of the Proposal Payment to the Offeror within forty-five (45) days after the later of: (a) notice from VDOT that it has awarded the Design-Build Contract to another Offeror; or (b) notice from VDOT that the procurement for the Project has been cancelled and that there will be no Contract Award.

**5. Effective Date of this Agreement.** The rights and obligations of VDOT and Offeror under this Agreement, including VDOT's ownership rights in Offeror's Intellectual Property, vests upon the date that Offeror's Proposal is submitted to VDOT. Notwithstanding the above, if Offeror's Proposal is determined by VDOT, in its sole discretion, to be nonresponsive to the RFP, then Offeror is deemed to have waived its right to obtain the Proposal Payment, and VDOT shall have no obligations under this Agreement.



6. **Indemnity.** Subject to the limitation contained below, Offeror shall, at its own expense, indemnify, protect and hold harmless VDOT and its agents, directors, officers, employees, representatives and contractors from all claims, costs, expenses, liabilities, demands, or suits at law or equity (“Claims”) of, by or in favor of or awarded to any third party arising in whole or in part from: (a) the negligence or wilful misconduct of Offeror or any of its agents, officers, employees, representatives or subcontractors; or (b) breach of any of Offeror’s obligations under this Agreement, including its representation and warranty under Section 8 hereof. This indemnity shall not apply with respect to any Claims caused by or resulting from the sole negligence or wilful misconduct of VDOT, or its agents, directors, officers, employees, representatives or contractors.

7. **Assignment.** Offeror shall not assign this Agreement, without VDOT’s prior written consent, which consent may be given or withheld in VDOT’s sole discretion. Any assignment of this Agreement without such consent shall be null and void.

8. **Authority to Enter into this Agreement.** By executing this Agreement, Offeror specifically represents and warrants that it has the authority to convey to VDOT all rights, title, and interest in Offeror’s Intellectual Property, including, but not limited to, those any rights that might have been vested in team members, subcontractors, consultants or anyone else who may have contributed to the development of Offeror’s Intellectual Property, free and clear of all liens, claims and encumbrances.

9. **Miscellaneous.**

a. Offeror and VDOT agree that Offeror, its team members, and their respective employees are not agents of VDOT as a result of this Agreement.

b. Any capitalized term used herein but not otherwise defined shall have the meanings set forth in the RFP.

c. This Agreement, together with the RFP, embodies the entire agreement of the parties with respect to the subject matter hereof. There are no promises, terms, conditions, or obligations other than those contained herein or in the RFP, and this Agreement shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties hereto.

d. It is understood and agreed by the parties hereto that if any part, term, or provision of this Agreement is by the courts held to be illegal or in conflict with any law of the Commonwealth of Virginia, validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term, or provisions to be invalid.

e. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia.

**IN WITNESS WHEREOF**, this Agreement has been executed and delivered as of the day and year first above written.

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

Wagman Fay SE a Joint Venture

By:  _____

Name: Glen K. Mays

Title: Vice President & General Manager



**ATTACHMENT 11.8.6(a)**  
**CERTIFICATION REGARDING DEBARMENT**  
**PRIMARY COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.

b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; and have not been convicted of any violations of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;

c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1) b) of this certification; and

d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.



Glen K. Mays April 7, 2022

Signature

Date

Vice President & General Manager

Title

Wagman Fay SE, a Joint Venture

Name of Firm

**ATTACHMENT 11.8.6(a)**  
**CERTIFICATION REGARDING DEBARMENT**  
**PRIMARY COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.


b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; and have not been convicted of any violations of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;

c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1) b) of this certification; and

d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

	Glen K.Mays	April 7, 2022	Vice President & General Manager
Signature	Date		Title

Wagman Heavy Civil, Inc.

Name of Firm



**ATTACHMENT 11.8.6(a)**  
**CERTIFICATION REGARDING DEBARMENT**  
**PRIMARY COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.

b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; and have not been convicted of any violations of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;

c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1) b) of this certification; and

d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

  
_____  
Signature

April 7, 2022  
_____  
Date

Secretary  
_____  
Title

FAY Southeast Inc.  
_____  
Name of Firm



ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

**Project No.: 0064-114-374 P101, R201, C501**

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
  
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

 5/10/2022  
Signature Date

VICE PRESIDENT, MID-ATLANTIC  
SECTOR LEAD  
Title

EXP U.S. Services, Inc.

_____  
Name of Firm




ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

**Project No.: 0064-114-374 P101, R201, C501**

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

	<u>3.24.22</u>	<u>VICE PRESIDENT</u>
Signature	Date	Title


Curtis Contracting, Inc.  
Name of Firm

**ATTACHMENT 11.8.6(b)**  
**CERTIFICATION REGARDING DEBARMENT**  
**LOWER TIER COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
  
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

	5-6-22	Chief Engineer
Signature	Date	Title

**PSI Intertek**

---

Name of Firm




**ATTACHMENT 11.8.6(b)**  
**CERTIFICATION REGARDING DEBARMENT**  
**LOWER TIER COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
  
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

 _____ Signature	03/24/2022 _____ Date	President _____ Title
----------------------------------------------------------------------------------------------------------	-----------------------------	-----------------------------

Polizos & Company Communications  
_____  
Name of Firm

ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-114-374 P101, R201, C501

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
  
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

	5/3/2022	President
Signature	Date	Title

HWR  
_____  
Name of Firm




**ATTACHMENT 11.8.6(b)**  
**CERTIFICATION REGARDING DEBARMENT**  
**LOWER TIER COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
  
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

	<u>3/24/2022</u>	<u>President</u>
Signature	Date	Title

Quinn Consulting Services, Inc.  
Name of Firm

ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

**Project No.: 0064-114-374 P101, R201, C501**

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

*Paul J. Navarro* on Behalf of  
Paul J. Navarro 5-4-22  
Signature                      Date

*Corporate Secretary*  
President + CEO  
Title

Navarro & Wright Consulting Engineers, Inc.  
Name of Firm




ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-114-374 P101, R201, C501

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
  
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The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

	May 3, 2022	
Signature	Date	President
		_____
		Title

O. R. Colan Associates, LLC

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Name of Firm

ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-114-374 P101, R201, C501

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The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

<u>Keith B. Smith</u>	<u>5/3/22</u>	<u>Vice President</u>
Signature	Date	Title

Mead & Hunt  
Name of Firm



ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

**Project No.: 0064-114-374 P101, R201, C501**

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<u>Steve Hassaj, Jr.</u>	<u>5-9-22</u>	<u>Senior VP/Operations Manager</u>
Signature	Date	Title

Survey and Mapping LLC

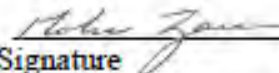
Name of Firm

ATTACHMENT 11.8.6(b)  
CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-114-374 P101, R201, C501

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
  
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The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

 Signature	May 3, 2022 Date	General Manager Title
-------------------------------------------------------------------------------------------------	---------------------	--------------------------

Iteris  
Name of Firm




**ATTACHMENT 11.8.6(b)**  
**CERTIFICATION REGARDING DEBARMENT**  
**LOWER TIER COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

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 Signature	<u>5/6/22</u> Date	<u>SR. VICE PRES.</u> Title
------------------------------------------------------------------------------------------------	-----------------------	--------------------------------

T.Y. Lin International

_____  
Name of Firm

**ATTACHMENT 11.8.6(b)**  
**CERTIFICATION REGARDING DEBARMENT**  
**LOWER TIER COVERED TRANSACTIONS**

**Project No.: 0064-114-374 P101, R201, C501**

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*Beth Silveira*      *May 5, 2022*      *Manager - Marketing*  
Signature                      Date                      Title

*WSSI Wetland Studies and Solutions, Inc.*  
Name of Firm



A photograph of a multi-level concrete bridge over water. The bridge has several levels of concrete beams and pillars. The water is dark green and rippled. The sky is blue with white clouds. A dark text box is overlaid in the center of the image.

# Appendix II Approved Personnel and Organizational Changes



## COMMONWEALTH of VIRGINIA

### DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.  
Commissioner

1401 East Broad Street  
Richmond, Virginia 23219

(804) 786-2701  
Fax: (804) 786-2940

May 4, 2022

Ms. Beth Silverman  
Wetland Studies and Solutions, Inc.  
5300 Wellington Branch Drive, Suite 100  
Gainesville, Virginia 20155

**Subject: Conflict of Interest Determination**  
I-64 Hampton Roads Express Lanes Segment 4C  
UPC: 117841

Dear Ms. Silverman,

Thank you for your letter dated May 3, 2022 requesting a conflict of interest determination. It is VDOT's understanding that this request is being made prior to Wagman-Fay JV adding your firm as part of its team. Our review of your request is based on VDOT's policy on organizational conflicts of interest (COI) and federal procurement regulations.

Per the information provided in your letter, WSSI acquired Kerr Environmental Services Corporation (KES) in November 2018 and EEE Consulting, Inc. (3e) in November 2020.

KES participated in the procurement phase for the Hampton Roads Bridge Tunnel Project for the Hampton Roads Connector Partners (HRCP) and Dragados to analyze environmental issues as a local environmental advisor. KES has not performed any work for the HRCP and Dragados after the award of the Hampton Roads Bridge Tunnel Project.

3e completed a Phase 1 Environmental Site Assessment for the lease of a property to be used for a concrete batch plant. This work was performed as a subconsultant to WRA who has a permitting support services contract with HRCP. This work was completed in February 2020. Per a follow up e-mail on May 2, 2022, you had indicated that WSSI will not be performing any additional work on this contract.

3e also completed asbestos and lead inspections on the existing eastbound and westbound Hampton Roads Bridge Tunnel tubes and the shop building. This work was completed between 2014 and 2017 under the Hazardous Materials and Compliance Services Statewide on call contract (Contract ID 44115).





**From:** Suril Shah <suril.shah@vdot.virginia.gov>  
**Sent:** Wednesday, May 4, 2022 9:16 AM  
**To:** Glen K. Mays <gkmays@wagman.com>  
**Subject:** RE: I-64 HREL Segment 4C - Non-Key Personnel Changes

Good morning Glen - VDOT has reviewed and approved your team change request as per noted below:

1. Hydrologic & Hydraulic/ River Mechanics: Beth Wangaard, P.E. (EXP U.S. Services, Inc., voluntary termination of employment) will be replaced by Brian Olson, PE (EXP U.S. Services, Inc.).
2. Railroads Engineering/ Coordination: Nate Morriss, P.E., S.E. (EXP U.S. Services, Inc., voluntary termination of employment) will be replaced by John Flint, PE (EXP U.S. Services, Inc.).
3. Demolition Expert: Les Carpenter (WFJV, voluntary termination of employment) will be replaced by Clint Filges (WFJV).
4. Environmental Compliance Manager- Ian Westbrook (WFJV, voluntary change of employment) will be replaced by Julia Conners (WSSI). Adding WSSI as a team member.
5. Contractor Incident Management Coordinator – George Polizos (Polizos & Company Communications) is being replaced with Danny Plott to comply with the RFP requirements associated with the CIMC. These requirements were introduced during RFP stage and were not known at the time of submitting SOQs.

Please note that RFP does not require submission of resumes for the ECM or CIMC at the Technical proposal stage; however, VDOT reserves the right to verify the qualifications of these individuals at any given time and may in its sole discretion elect to do so prior to Award of the Contract. Please also note the requirements related to changes in the organizational chart and narrative as outlined in RFP Part 1, Section 4.2.

Please let me know if you have any questions or concerns.

Thanks,  
Suril



**Suril Shah**  
*Sr. Project Delivery Engineer-APD*  
Alternative Project Delivery  
VDOT  
804-225-3799  
[suril.shah@VDOT.Virginia.gov](mailto:suril.shah@VDOT.Virginia.gov)



**WAGMAN**  
General Construction | Heavy Civil | Geotechnical

**FAY SOUTHEAST**  
S&B USA CONSTRUCTION

exp.



# I-64 Hampton Roads Express Lanes (HREL) Segment 4C Volume II

VDOT

State Project No.: 0064-114-374 P101, R201, C501

Federal Project No.: NHPP-064-3(522)

Contract ID Number: C00117841DB111

May 12, 2022





# 4.3.1

Roadway Plans





PROJECT MANAGER: _____  
SURVEYED BY, DATE: _____  
DESIGN BY: EXP. U.S. Services, Inc. (202) 812-0922  
SUBSURFACE UTILITY BY, DATE: _____

### CONCEPTUAL ROADWAY PLANS

#### LEGEND

- Demolition of Pavement
- Asphalt Concrete Pavement Mill & Overlay
- Proposed Full Depth Pavement
- Proposed Full Depth Paved Shoulder
- Proposed Bridge
- Proposed Permanent Drainage Easement
- Proposed Noise Barrier Wall
- Proposed Retaining Wall
- Proposed Guardrail
- Proposed Fill Limit
- Proposed Cut Limit
- Proposed Drainage Pipe
- Proposed Outlet Drainage Protection
- Proposed Drainage Feature
- Proposed Flat Bottom Ditch
- Proposed Barrier
- Proposed MVDS & Pole
- Proposed DMS Cabinet
- Proposed T-MVDS
- Proposed MVDS Camera
- Proposed Luminaires
- Proposed Junction Boxes
- Proposed Tolling Equipment Cabinet
- Proposed Toll Gantry
- Proposed Warning Gate

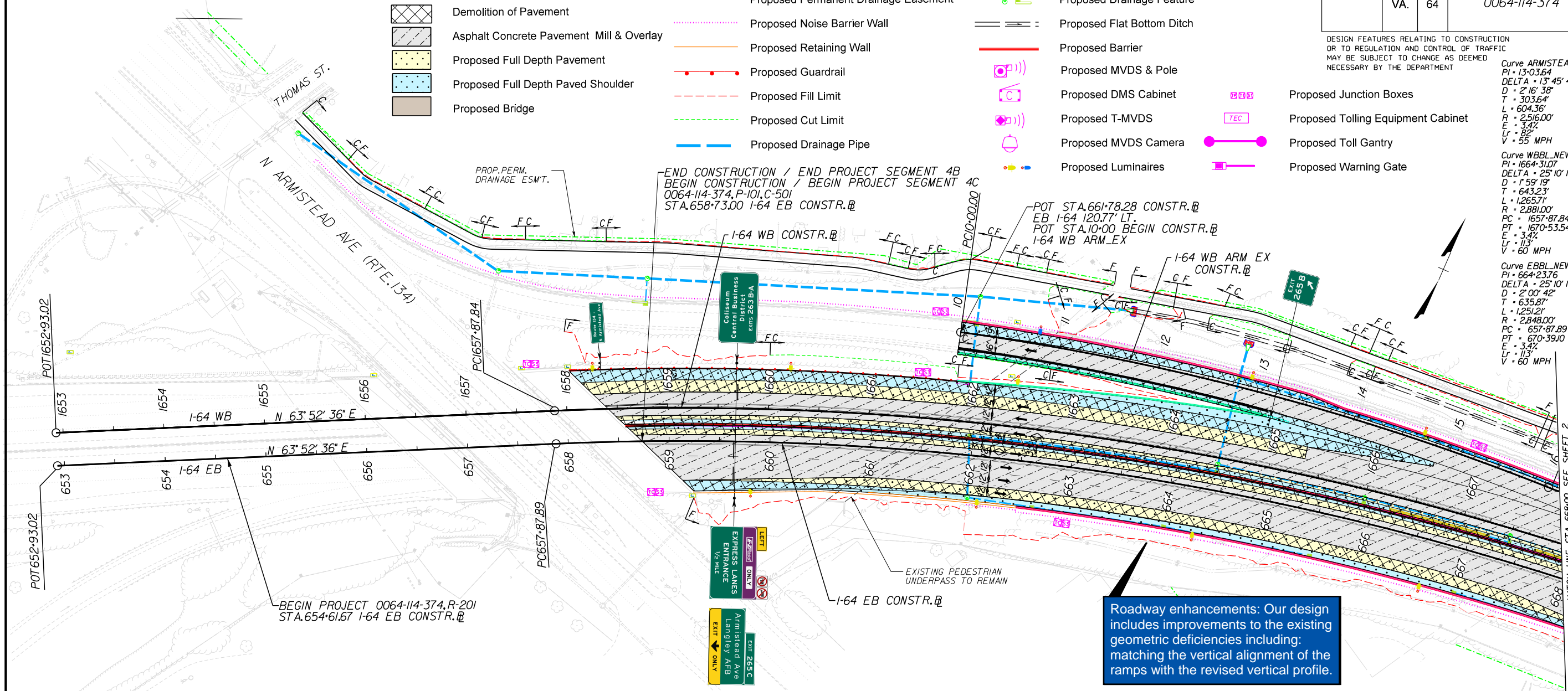
REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-114-374	1

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Curve ARMISTEADWBEX_1  
PI = 13+03.64  
DELTA = 13° 45' 46.52" (RT)  
D = 2° 16' 38"  
T = 303.64'  
L = 604.36'  
R = 2,516.00'  
E = 3.42'  
Lr = 82'  
V = 55 MPH

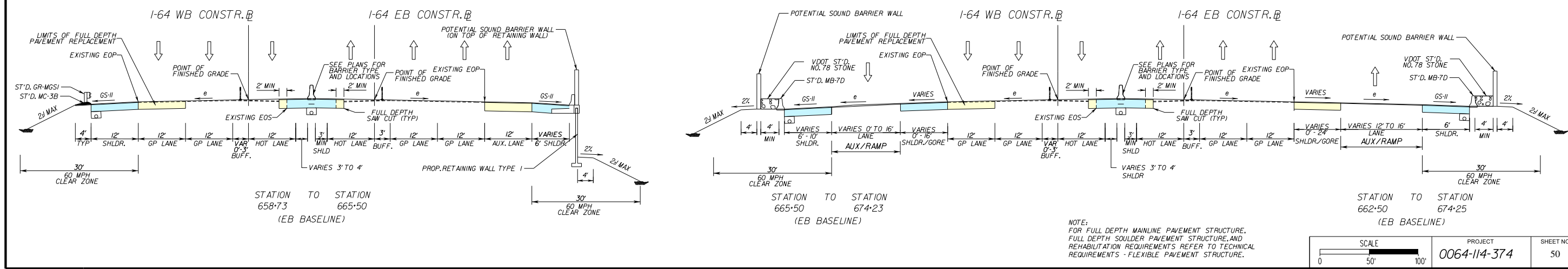
Curve WBBL_NEW2_3  
PI = 1664+31.07  
DELTA = 25° 10' 18.17" (RT)  
D = 1° 59' 19"  
T = 643.23'  
L = 1,265.71'  
R = 2,881.00'  
PC = 1657+87.84  
PT = 1670+53.54  
E = 3.42'  
Lr = 113'  
V = 60 MPH

Curve EBBL_NEW_3  
PI = 664+23.76  
DELTA = 25° 10' 18.17" (RT)  
D = 2° 00' 42"  
T = 635.87'  
L = 1,251.21'  
R = 2,848.00'  
PC = 657+87.89  
PT = 670+39.10  
E = 3.42'  
Lr = 113'  
V = 60 MPH



**Roadway enhancements:** Our design includes improvements to the existing geometric deficiencies including: matching the vertical alignment of the ramps with the revised vertical profile.

### TYPICAL SECTIONS





PROJECT MANAGER _____  
SURVEYED BY, DATE _____  
DESIGN BY EXP. U.S. Services, Inc. (202) 812-0922  
SUBSURFACE UTILITY BY, DATE _____

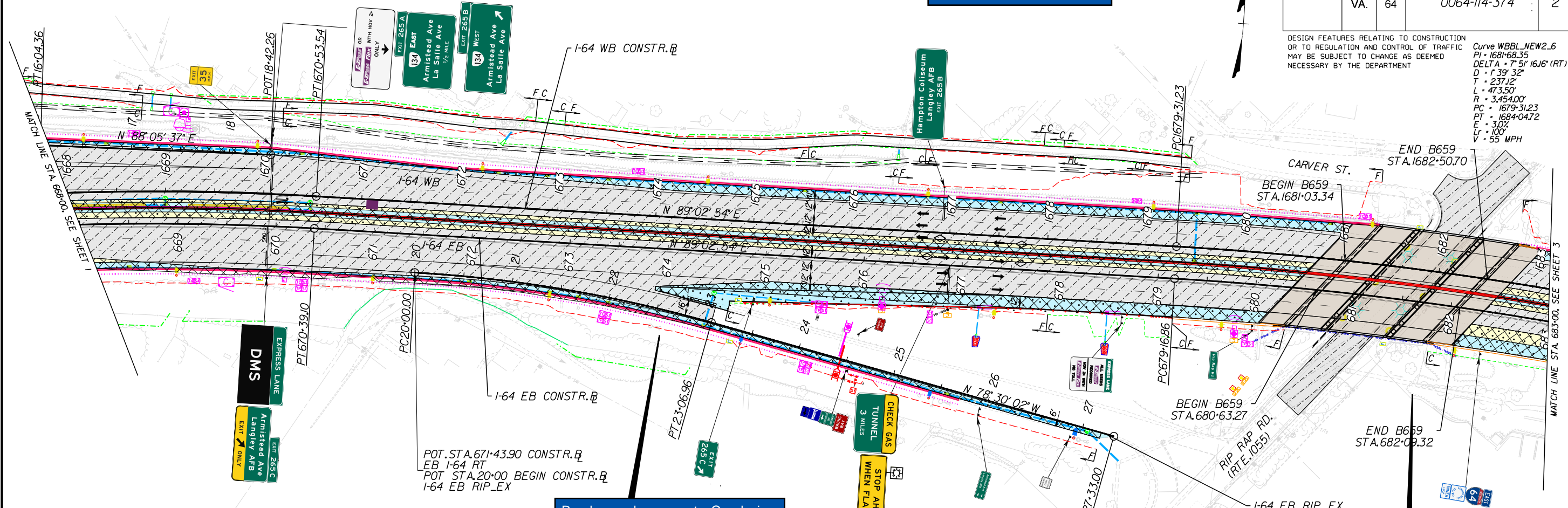
CONCEPTUAL ROADWAY PLANS

Integrated 3D modeling using  
OpenRoads and OpenBridge.

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-114-374	2

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

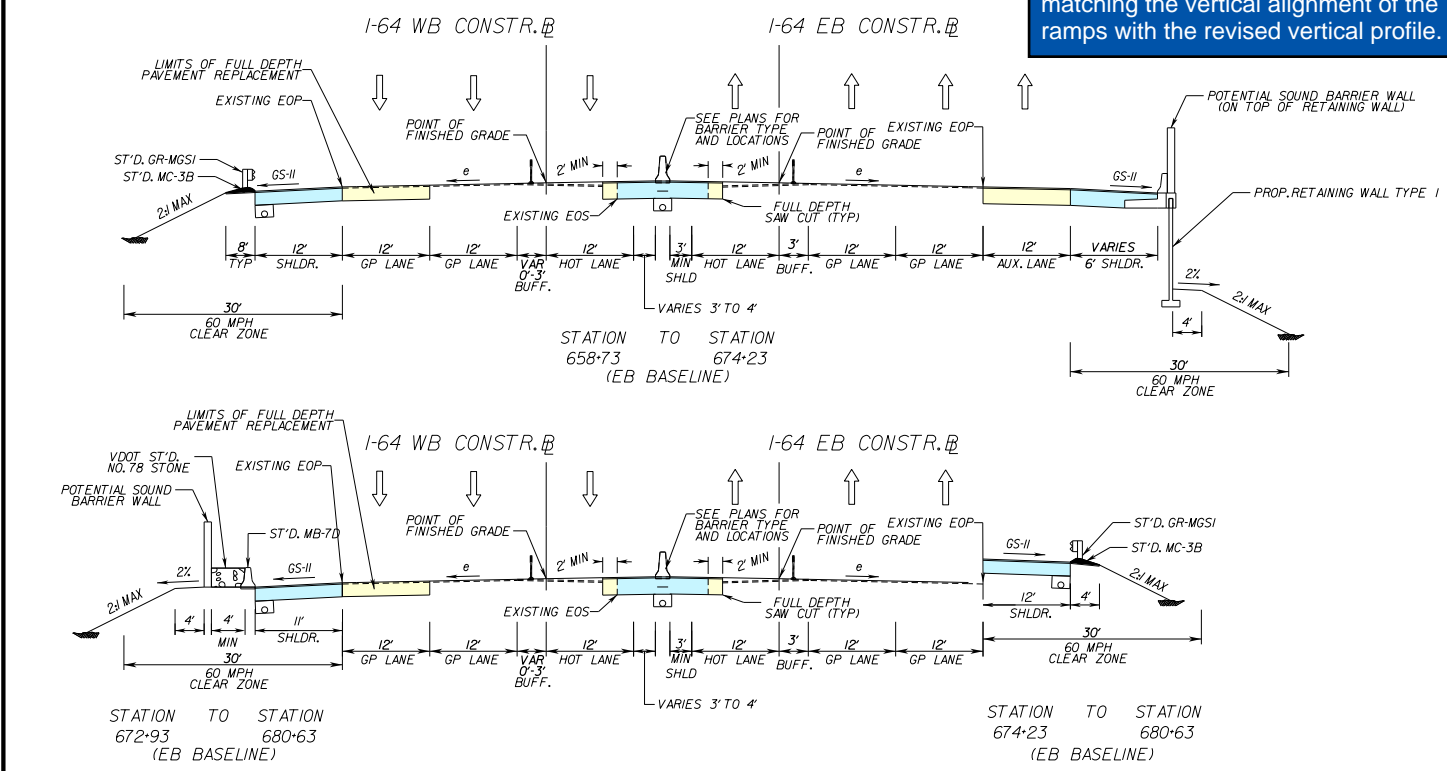
Curve WBBL_NEW2.6  
PI • 1681+68.35  
DELTA • 7° 51' 16.16" (RT)  
D • 1' 39' 32"  
T • 237.12'  
L • 473.50'  
R • 3,454.00'  
PC • 1679+31.23  
PT • 1684+04.72  
E • 3.02%  
Lr • 100'  
V • 55 MPH



TYPICAL SECTIONS

Roadway enhancements: Our design includes improvements to the existing geometric deficiencies including: matching the vertical alignment of the ramps with the revised vertical profile.

Roadway enhancements: Our design includes improvements to the existing geometric deficiencies including: lengthening of the crest vertical curves at the overpasses resulting in improvements in the Stopping Sight Distance.



LEGEND

- Demolition of Pavement
- Asphalt Concrete Pavement Mill & Overlay
- Proposed Full Depth New Pavement
- Proposed Paved Shoulder
- Proposed Bridge
- Proposed Permanent Drainage Easement
- Proposed Temporary Construction Easement
- Proposed Right of Way and/or Limited Access
- Proposed Noise Barrier Wall
- Proposed Retaining Wall
- Proposed Drainage Pipe
- Proposed Barrier
- Proposed Guardrail
- Proposed Fill Limit
- Proposed Cut Limit
- Proposed Junction Boxes
- Proposed Tolling Equipment Cabinet
- Proposed Toll Gantry
- Proposed Warning Gate
- Proposed MVDS & Pole
- Proposed DMS Cabinet
- Proposed T-MVDS
- Proposed MVDS Camera
- Proposed Outlet Drainage Protection
- Proposed Drainage Feature
- Proposed Luminaires

NOTE:  
FOR FULL DEPTH MAINLINE PAVEMENT STRUCTURE,  
FULL DEPTH SHOULDER PAVEMENT STRUCTURE, AND  
REHABILITATION REQUIREMENTS REFER TO TECHNICAL  
REQUIREMENTS - FLEXIBLE PAVEMENT STRUCTURE.

SCALE	PROJECT	SHEET NO.
0 50' 100'	0064-114-374	51



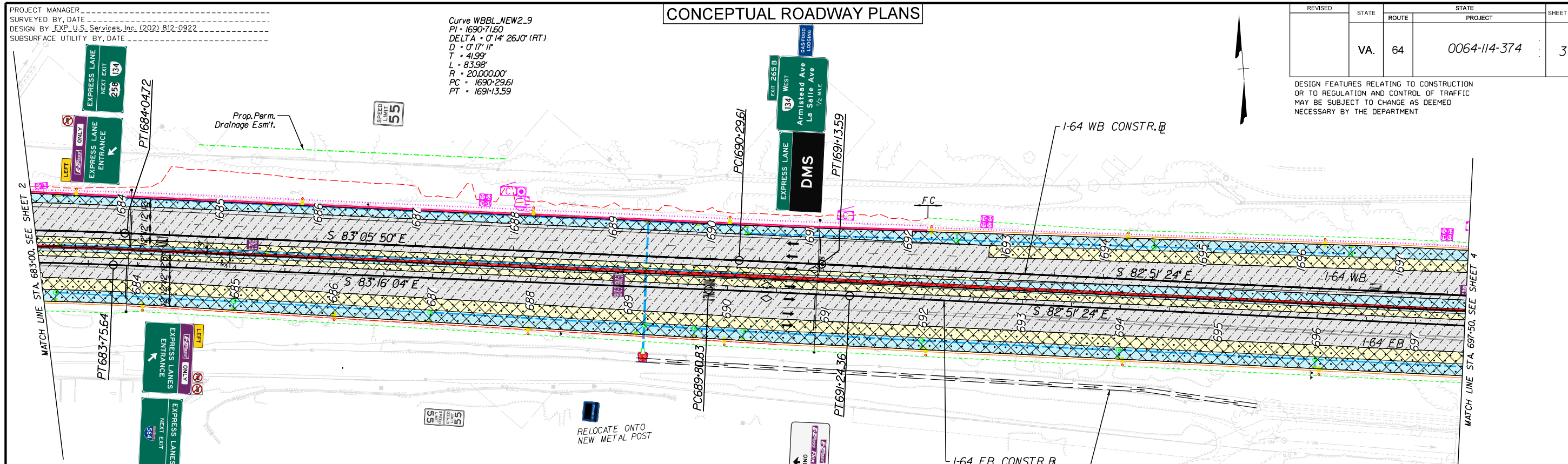
### CONCEPTUAL ROADWAY PLANS

PROJECT MANAGER _____  
SURVEYED BY, DATE _____  
DESIGN BY EXP. U.S. Services, Inc. (202) 812-0922  
SUBSURFACE UTILITY BY, DATE _____

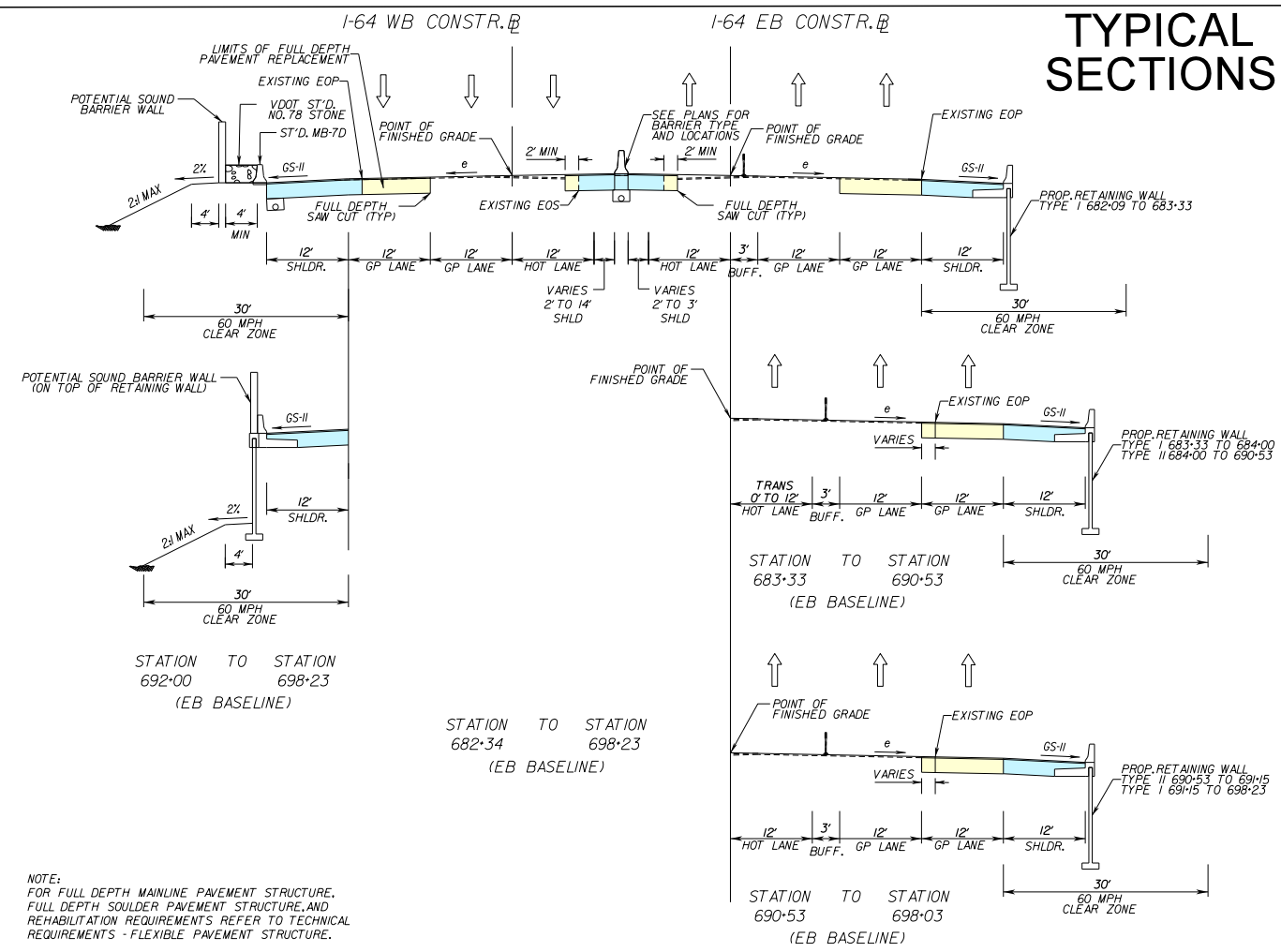
Curve WBBL_NEW2_9  
PI • 1690+71.60  
DELTA • 0°14'26.10" (RT)  
D • 0'17'11"  
T • 41.99'  
L • 83.98'  
R • 20,000.00'  
PC • 1690+29.61  
PT • 1691+13.59

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-114-374	3

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



### TYPICAL SECTIONS



#### LEGEND

- Demolition of Pavement
- Asphalt Concrete Pavement Mill & Overlay
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- Proposed Luminaires

NOTE:  
FOR FULL DEPTH MAINLINE PAVEMENT STRUCTURE,  
FULL DEPTH SHOULDER PAVEMENT STRUCTURE, AND  
REHABILITATION REQUIREMENTS REFER TO TECHNICAL  
REQUIREMENTS - FLEXIBLE PAVEMENT STRUCTURE.

SCALE 0 50' 100'	PROJECT 0064-114-374	SHEET NO. 52
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PROJECT MANAGER _____  
SURVEYED BY, DATE _____  
DESIGN BY EXP. U.S. Services, Inc. (202) 812-0922  
SUBSURFACE UTILITY BY, DATE _____

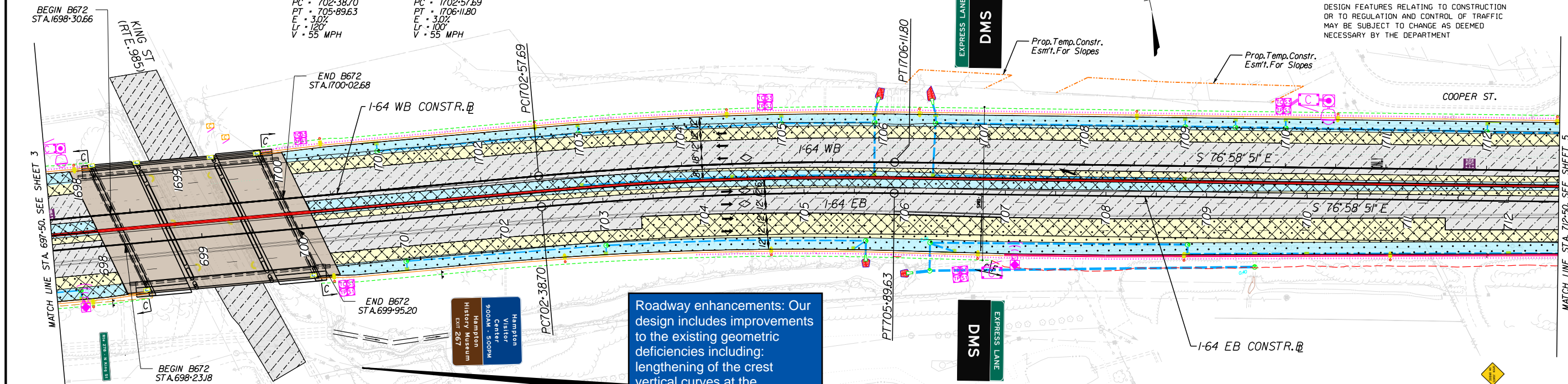
Curve EBBL_NEW_I2  
PI - 704-14.32  
DELTA - 5° 52' 33.04" (RT)  
D - 1' 40' 28"  
T - 175.62'  
L - 350.94'  
R - 3,422.00'  
PC - 702-38.70  
PT - 705-89.63  
E - 3.02%  
L - 120'  
V - 55 MPH

Curve WBBL_NEW2_I2  
PI - 1704-34.90  
DELTA - 5° 52' 33.04" (RT)  
D - 1' 39' 33"  
T - 177.21'  
L - 354.12'  
R - 3,453.00'  
PC - 1702-57.69  
PT - 1706-11.80  
E - 3.02%  
L - 100'  
V - 55 MPH

### CONCEPTUAL ROADWAY PLANS

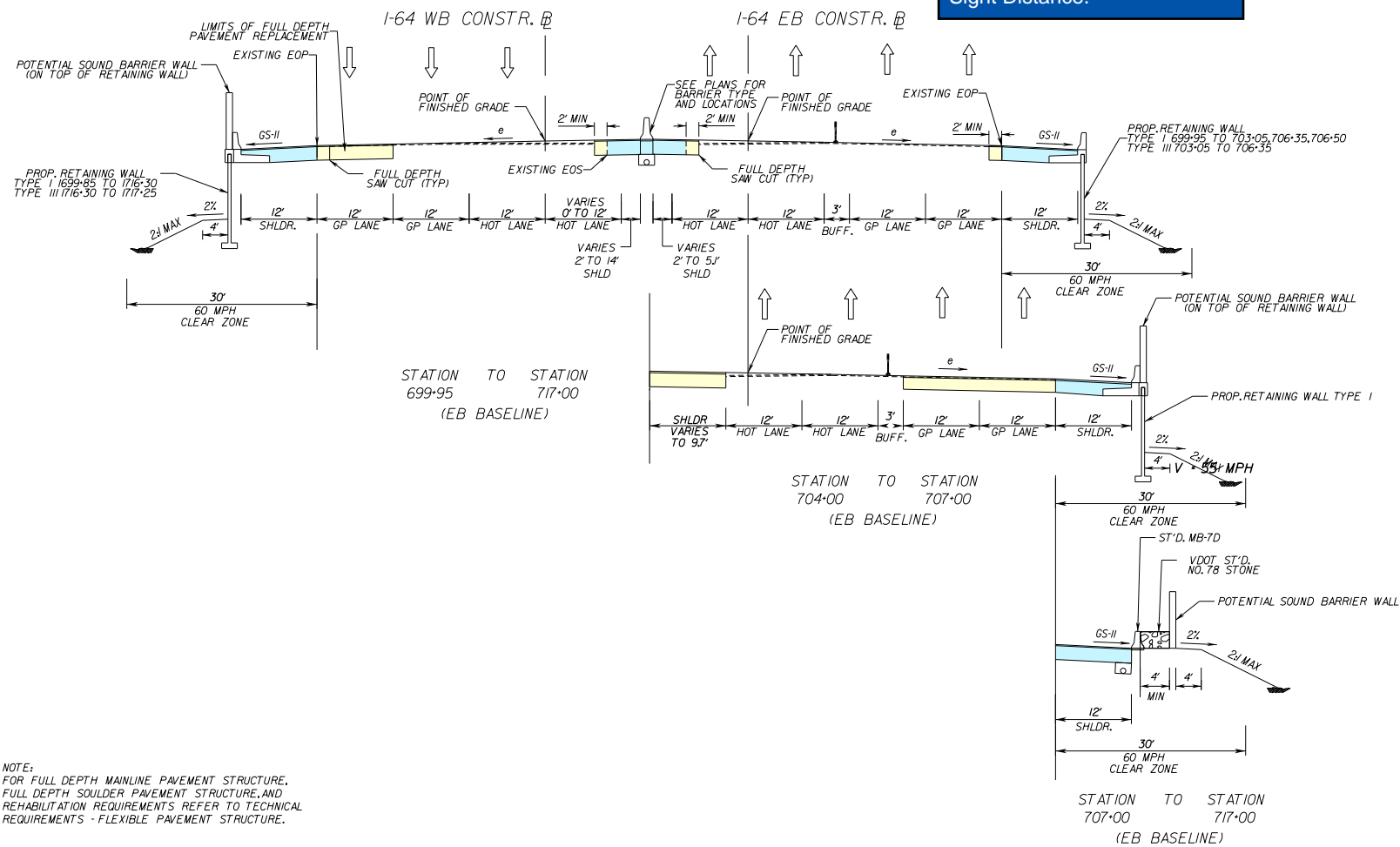
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-114-374	4

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



**Roadway enhancements:** Our design includes improvements to the existing geometric deficiencies including: lengthening of the crest vertical curves at the overpasses resulting in improvements in the Stopping Sight Distance.

### TYPICAL SECTIONS



NOTE:  
FOR FULL DEPTH MAINLINE PAVEMENT STRUCTURE, FULL DEPTH SHOULDER PAVEMENT STRUCTURE, AND REHABILITATION REQUIREMENTS REFER TO TECHNICAL REQUIREMENTS - FLEXIBLE PAVEMENT STRUCTURE.



### LEGEND

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- Proposed Warning Gate
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- Proposed DMS Cabinet
- Proposed T-MVDS
- Proposed MVDS Camera
- Proposed Outlet Drainage Protection
- Proposed Drainage Feature
- Proposed Flat Bottom Ditch
- Proposed Luminaires

SCALE 0 50' 100'	PROJECT 0064-114-374	SHEET NO. 53
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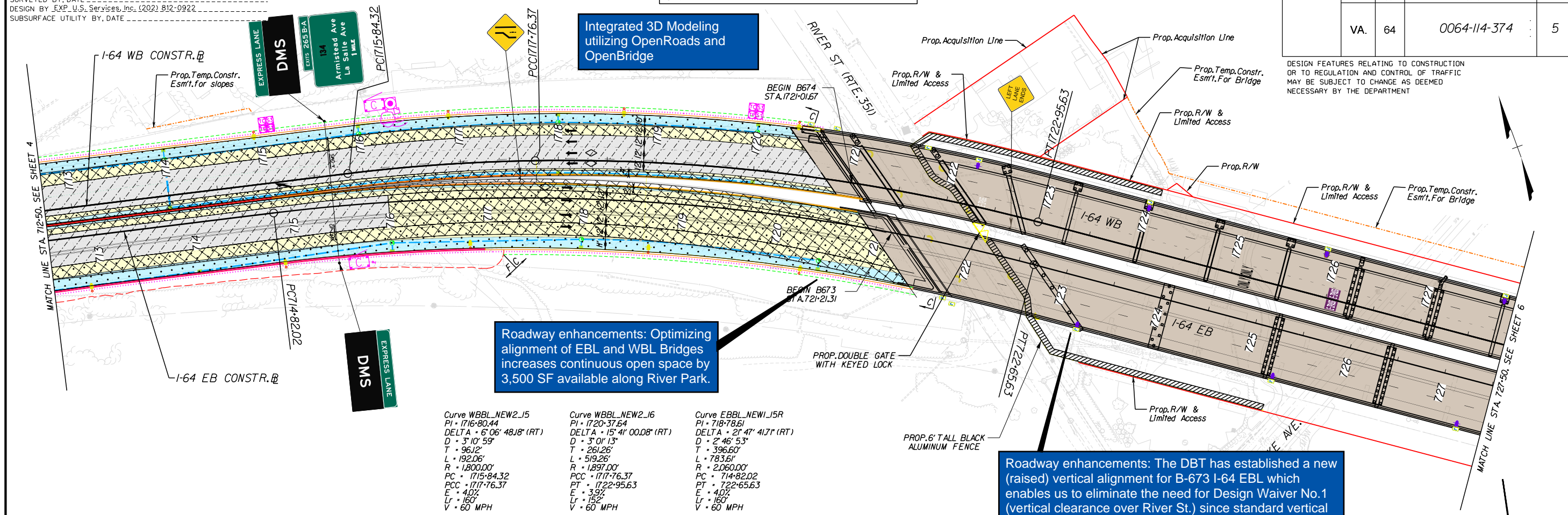


PROJECT MANAGER _____  
SURVEYED BY, DATE _____  
DESIGN BY EXP. U.S. Services, Inc. (202) 812-0922  
SUBSURFACE UTILITY BY, DATE _____

### CONCEPTUAL ROADWAY PLANS

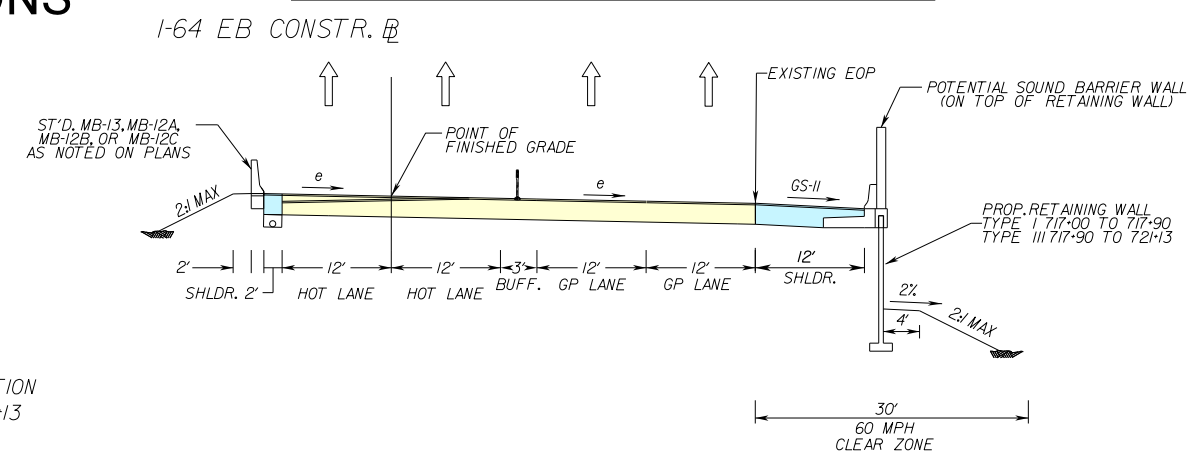
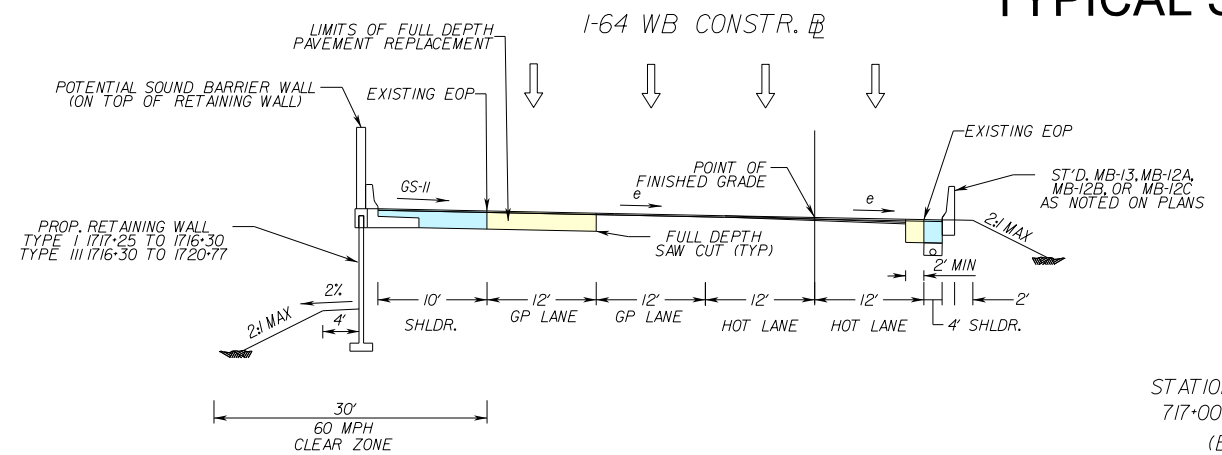
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-114-374	5

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



<p>Curve WBBL_NEW2_J5 PI • 1716-80.44 DELTA • 6° 06' 48J8" (RT) D • 3° 10' 59" T • 96J2' L • 192.06' R • 1,800.00' PC • 1715-84.32 PCC • 1717-76.37 E • 4.0% Lr • 160' V • 60 MPH</p>	<p>Curve WBBL_NEW2_J6 PI • 1720-37.64 DELTA • 15° 41' 00.08" (RT) D • 3° 01' 13" T • 261.26' L • 519.26' R • 1,897.00' PCC • 1717-76.37 PT • 1722-95.63 E • 3.9% Lr • 152' V • 60 MPH</p>	<p>Curve EBBL_NEW1_I5R PI • 718-78.61 DELTA • 21° 47' 41.7" (RT) D • 2° 46' 53" T • 396.60' L • 783.61' R • 2,060.00' PC • 714-82.02 PT • 722-65.63 E • 4.0% Lr • 160' V • 60 MPH</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### TYPICAL SECTIONS



STATION TO STATION  
717-00 TO 721-13  
(EB BASELINE)

#### LEGEND

- Demolition of Pavement
- Asphalt Concrete Pavement Mill & Overlay
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- Proposed Permanent Drainage Easement
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- Proposed Retaining Wall
- Proposed Drainage Pipe
- Proposed Flat Bottom Ditch
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- Proposed MVDS & Pole
- Proposed DMS Cabinet
- Proposed T-MVDS
- Proposed MVDS Camera
- Proposed Outlet Drainage Protection
- Proposed Drainage Feature
- Proposed Luminaires
- Proposed Junction Boxes
- Proposed Tolling Equipment Cabinet
- Proposed Toll Gantry
- Proposed Warning Gate

Roadway enhancements: Horizontal alignment of B-673 I-64 EBL has been shifted towards the existing B-674 I-64 WB Bridge, resulting in: 1) increasing the radii of the connecting curved approach alignment and thus, improved superelevation and sight distance and 2) increasing the clearance between the proposed B-673 I-64 EBL Bridge and the Dominion power lines from the RFP requirement of 32'-11" (min.) to over 60 ft.

SCALE 0 50' 100'	PROJECT 0064-114-374	SHEET NO. 54
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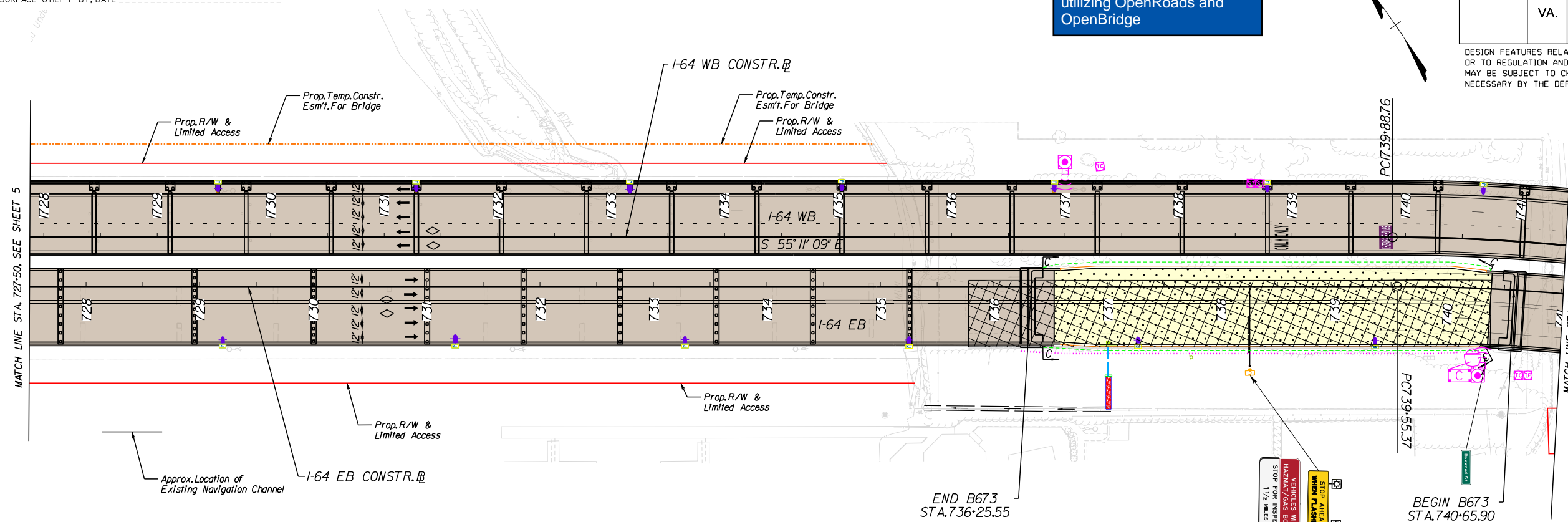
PROJECT MANAGER _____  
SURVEYED BY, DATE _____  
DESIGN BY EXP. U.S. Services, Inc. (202) 812-0922  
SUBSURFACE UTILITY BY, DATE _____

### CONCEPTUAL ROADWAY PLANS

Integrated 3D Modeling  
utilizing OpenRoads and  
OpenBridge

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-114-374	6

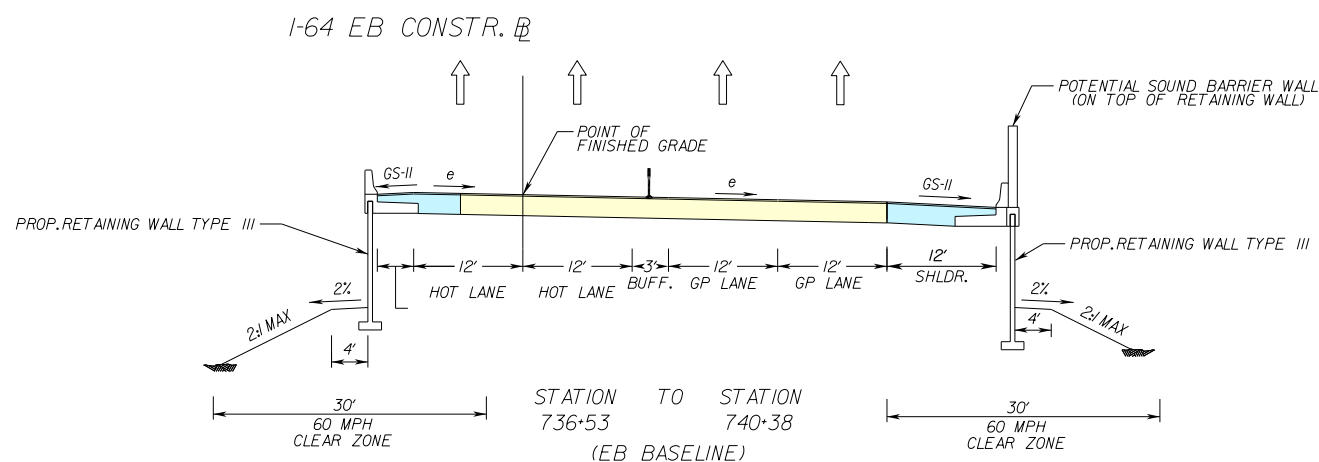
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



Curve EBBL_NEW1_I8R  
PI = 743+48.39  
DELTA = 26° 47' 43.00" (RT)  
D = 3' 28" 21"  
T = 393.01'  
L = 771.65'  
R = 1650.00'  
PC = 739+55.37  
PT = 747+27.02  
E = 4.0%  
Lr = 160'  
V = 60 MPH

Curve WBBL_NEW2_I9  
PI = 743+75.82  
DELTA = 26° 47' 43.00" (RT)  
D = 3' 31" 33"  
T = 387.06'  
L = 759.96'  
R = 1625.00'  
PC = 739+88.76  
PT = 747+48.71  
E = 4.0%  
Lr = 160'  
V = 60 MPH

### TYPICAL SECTIONS



#### LEGEND

- Demolition of Pavement
- Asphalt Concrete Pavement Mill & Overlay
- Proposed Full Depth New Pavement
- Proposed Paved Shoulder
- Proposed Bridge
- Proposed Permanent Drainage Easement
- Proposed Temporary Construction Easement
- Proposed Right of Way and/or Limited Access
- Proposed Noise Barrier Wall
- Proposed Retaining Wall
- Proposed Drainage Pipe
- Proposed Flat Bottom Ditch
- Proposed Barrier
- Proposed Guardrail
- Proposed Fill Limit
- Proposed Cut Limit
- Proposed Junction Boxes
- Proposed Tolling Equipment Cabinet
- Proposed Toll Gantry
- Proposed Warning Gate
- Proposed MVDS & Pole
- Proposed DMS Cabinet
- Proposed T-MVDS
- Proposed MVDS Camera
- Proposed Outlet Drainage Protection
- Proposed Drainage Feature
- Proposed Luminaires

NOTE:  
FOR FULL DEPTH MAINLINE PAVEMENT STRUCTURE,  
FULL DEPTH SHOULDER PAVEMENT STRUCTURE, AND  
REHABILITATION REQUIREMENTS REFER TO TECHNICAL  
REQUIREMENTS - FLEXIBLE PAVEMENT STRUCTURE.

SCALE	PROJECT	SHEET NO.
0 50' 100'	0064-114-374	55







PROJECT MANAGER: _____  
 SURVEYED BY, DATE: _____  
 DESIGN BY: EXP. U.S. Services, Inc. (202) 812-0922  
 SUBSURFACE UTILITY BY, DATE: _____

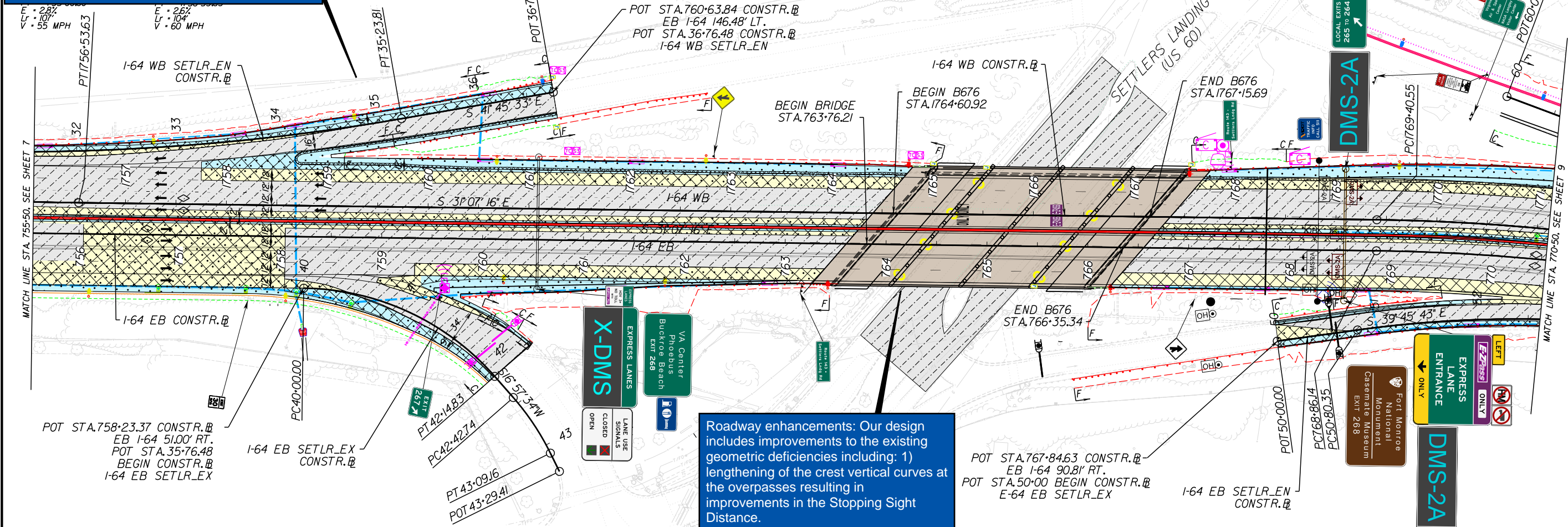
Curve	SETTLERSWBEN_1	EBBL_NEW1_24	WBBL_NEW2_25	SETTLERSEBEX_1	SETTLERSEBEN_3
PI	32.63.08	774.13.29	1774.75.74	41.14.19	52.77.60
DELTA	13° 16' 21.26" (LT)	29° 19' 36.01" (RT)	29° 19' 36.01" (RT)	48° 04' 49.52" (RT)	19° 31' 55.62" (RT)
D	2' 32' 02"	2' 50' 38"	2' 48' 04"	22' 22' 52"	4' 59' 59"
T	263.08'	527.15'	535.20'	114.19'	197.25'
L	13.81'	1031.18'	1046.92'	214.83'	390.67'
R	261.00'	2,014.63'	2,045.38'	256.00'	1,146.00'
PC	30+00.00	768+86.14	1769+40.55	40+00.00	50+80.35
PT	35+23.81	779+17.33	1779+87.47	42+14.83	54+71.02
E	3.8%	3.8%	3.8%	4.0%	3.8%
Lr	152'	152'	152'	73'	84'
V	60 MPH	60 MPH	60 MPH	30 MPH	45 MPH

### CONCEPTUAL ROADWAY PLANS

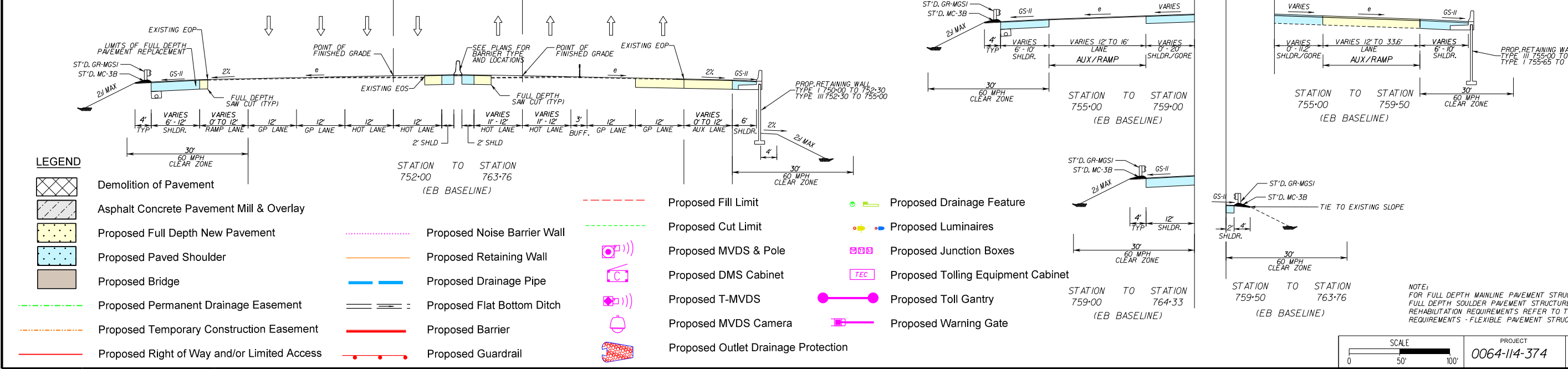
REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-114-374	8

**Roadway enhancements:** Our design includes improvements to the existing geometric deficiencies including: matching the vertical alignment of the ramps with the revised vertical profile.

**Roadway enhancements:** Our design includes improvements to the existing geometric deficiencies including: 1) lengthening of the crest vertical curves at the overpasses resulting in improvements in the Stopping Sight Distance.



### TYPICAL SECTIONS



#### LEGEND

- Demolition of Pavement
- Asphalt Concrete Pavement Mill & Overlay
- Proposed Full Depth New Pavement
- Proposed Paved Shoulder
- Proposed Bridge
- Proposed Permanent Drainage Easement
- Proposed Temporary Construction Easement
- Proposed Right of Way and/or Limited Access
- Proposed Noise Barrier Wall
- Proposed Retaining Wall
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- Proposed Flat Bottom Ditch
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- Proposed Drainage Feature
- Proposed MVDS & Pole
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- Proposed T-MVDS
- Proposed MVDS Camera
- Proposed Outlet Drainage Protection
- Proposed Luminaires
- Proposed Junction Boxes
- Proposed Tolling Equipment Cabinet
- Proposed Toll Gantry
- Proposed Warning Gate

NOTE: FOR FULL DEPTH MAINLINE PAVEMENT STRUCTURE, FULL DEPTH SHOULDER PAVEMENT STRUCTURE, AND REHABILITATION REQUIREMENTS REFER TO TECHNICAL REQUIREMENTS - FLEXIBLE PAVEMENT STRUCTURE.

SCALE	PROJECT	SHEET NO.
0 50' 100'	0064-114-374	57

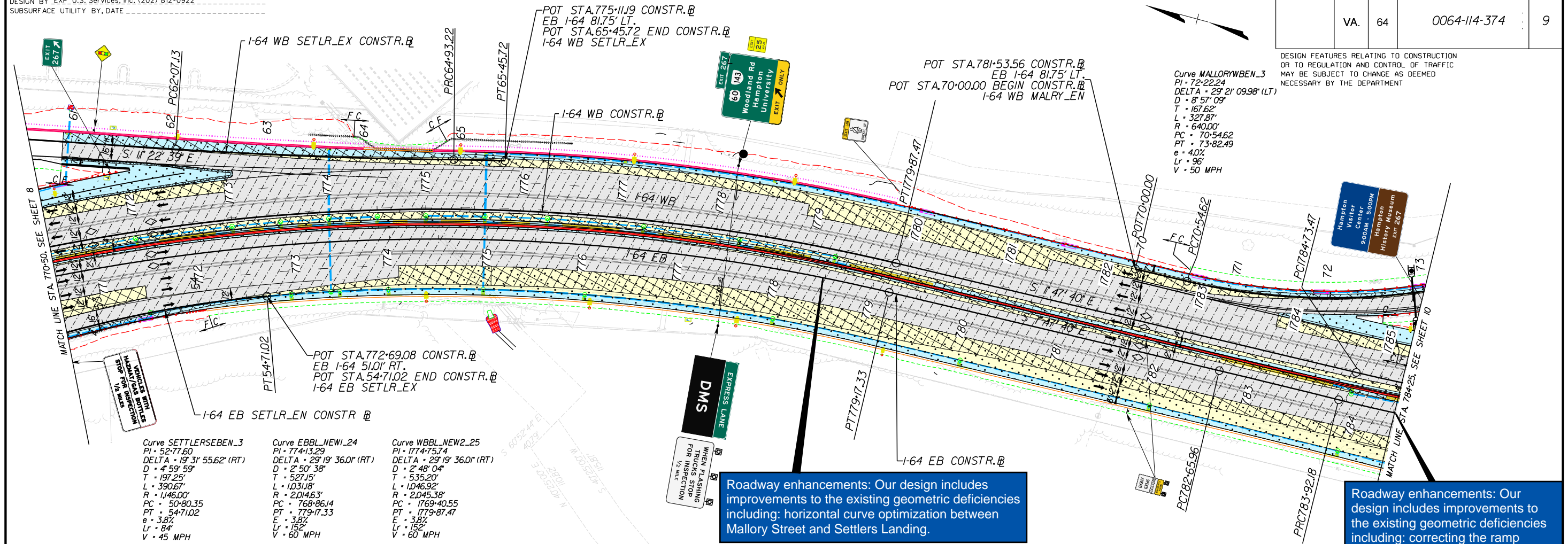


PROJECT MANAGER _____  
SURVEYED BY, DATE _____  
DESIGN BY EXP. U.S. Services, Inc. (202) 812-0922  
SUBSURFACE UTILITY BY, DATE _____

### CONCEPTUAL ROADWAY PLANS

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-114-374	9

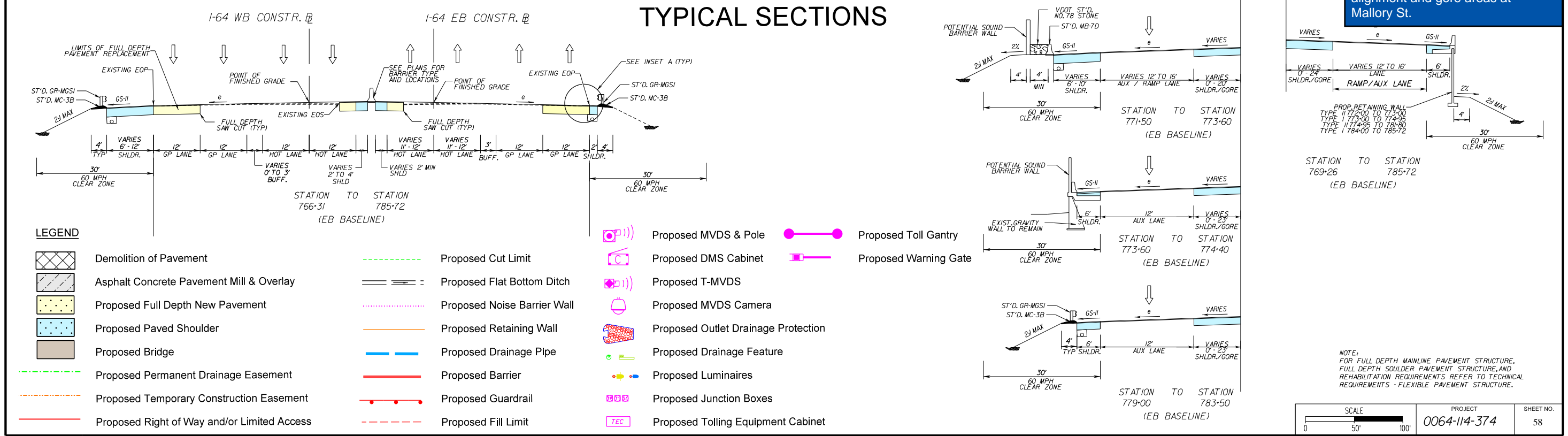
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



Roadway enhancements: Our design includes improvements to the existing geometric deficiencies including: horizontal curve optimization between Mallory Street and Settlers Landing.

Roadway enhancements: Our design includes improvements to the existing geometric deficiencies including: correcting the ramp alignment and gore areas at Mallory St.

### TYPICAL SECTIONS



SCALE	PROJECT	SHEET NO.
0 50' 100'	0064-114-374	58

### CONCEPTUAL ROADWAY PLANS

PROJECT MANAGER: _____  
 SURVEYED BY, DATE: _____  
 DESIGN BY: EXP. U.S. Services, Inc. (202) 812-0922  
 SUBSURFACE UTILITY BY, DATE: _____

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-114-374	10

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

POT STA.785+54.88 CONSTR. @  
 EB I-64 166.44' LT.  
 POT STA.74+02.62 END CONSTR. @  
 I-64 WB MALRY_EN

I-64 WB MALRY_EN  
 CONSTR. @

PTT3+82.49  
 POT14+02.62

Downtown Hampton  
 East 267

EXPRESS LANE  
 ENTRANCE  
 1/4 MILE

LEFT

NEW GENERATOR, SERVICE  
 PANEL AND PROPANE TANK

ACCESS DRIVE

S 31°08' 50" E

I-64 WB CONSTR. @

I-64 WB

I-64 EB CONSTR. @

I-64 EB

END CONSTRUCTION / END PROJECT SEGMENT 4C  
 BEGIN PROJ 0064-M06-032.C-50I SEGMENT 1 (BY OTHERS)  
 0064-114-374, PE-101, C-50I  
 STA.785+76.76 I-64 EB CONSTR. @

MATCH LINE STA. 784+25, SEE SHEET 9

TEC

INSPECTION  
 STATION  
 1/4 MILE  
 OPEN 24 HOURS

EXPRESS  
 FLOW  
 HOV 3+ MIN  
 ONLY

SPEED LIMIT  
 MAY VARY  
 NEXT 8 MILES  
 WHEN FLASHING

169 NORTH  
 Malloy St  
 Ft Monroe  
 EXIT 268  
 LAST EXIT BEFORE TUNNEL  
 EXIT ONLY

#### LEGEND

- |  |                                             |  |                             |  |                                     |  |                                    |
|--|---------------------------------------------|--|-----------------------------|--|-------------------------------------|--|------------------------------------|
|  | Demolition of Pavement                      |  | Proposed Noise Barrier Wall |  | Proposed MVDS & Pole                |  | Proposed Junction Boxes            |
|  | Asphalt Concrete Pavement Mill & Overlay    |  | Proposed Retaining Wall     |  | Proposed DMS Cabinet                |  | Proposed Tolling Equipment Cabinet |
|  | Proposed Full Depth New Pavement            |  | Proposed Drainage Pipe      |  | Proposed T-MVDS                     |  | Proposed Toll Gantry               |
|  | Proposed Paved Shoulder                     |  | Proposed Flat Bottom Ditch  |  | Proposed MVDS Camera                |  | Proposed Warning Gate              |
|  | Proposed Bridge                             |  | Proposed Barrier            |  | Proposed Outlet Drainage Protection |  |                                    |
|  | Proposed Permanent Drainage Easement        |  | Proposed Guardrail          |  | Proposed Drainage Feature           |  |                                    |
|  | Proposed Temporary Construction Easement    |  | Proposed Fill Limit         |  | Proposed Luminaires                 |  |                                    |
|  | Proposed Right of Way and/or Limited Access |  | Proposed Cut Limit          |  |                                     |  |                                    |

NOTE:  
 FOR FULL DEPTH MAINLINE PAVEMENT STRUCTURE,  
 FULL DEPTH SHOULDER PAVEMENT STRUCTURE, AND  
 REHABILITATION REQUIREMENTS REFER TO TECHNICAL  
 REQUIREMENTS - FLEXIBLE PAVEMENT STRUCTURE.

SCALE	PROJECT	SHEET NO.
0 50' 100'	0064-114-374	59



# 4.3.2

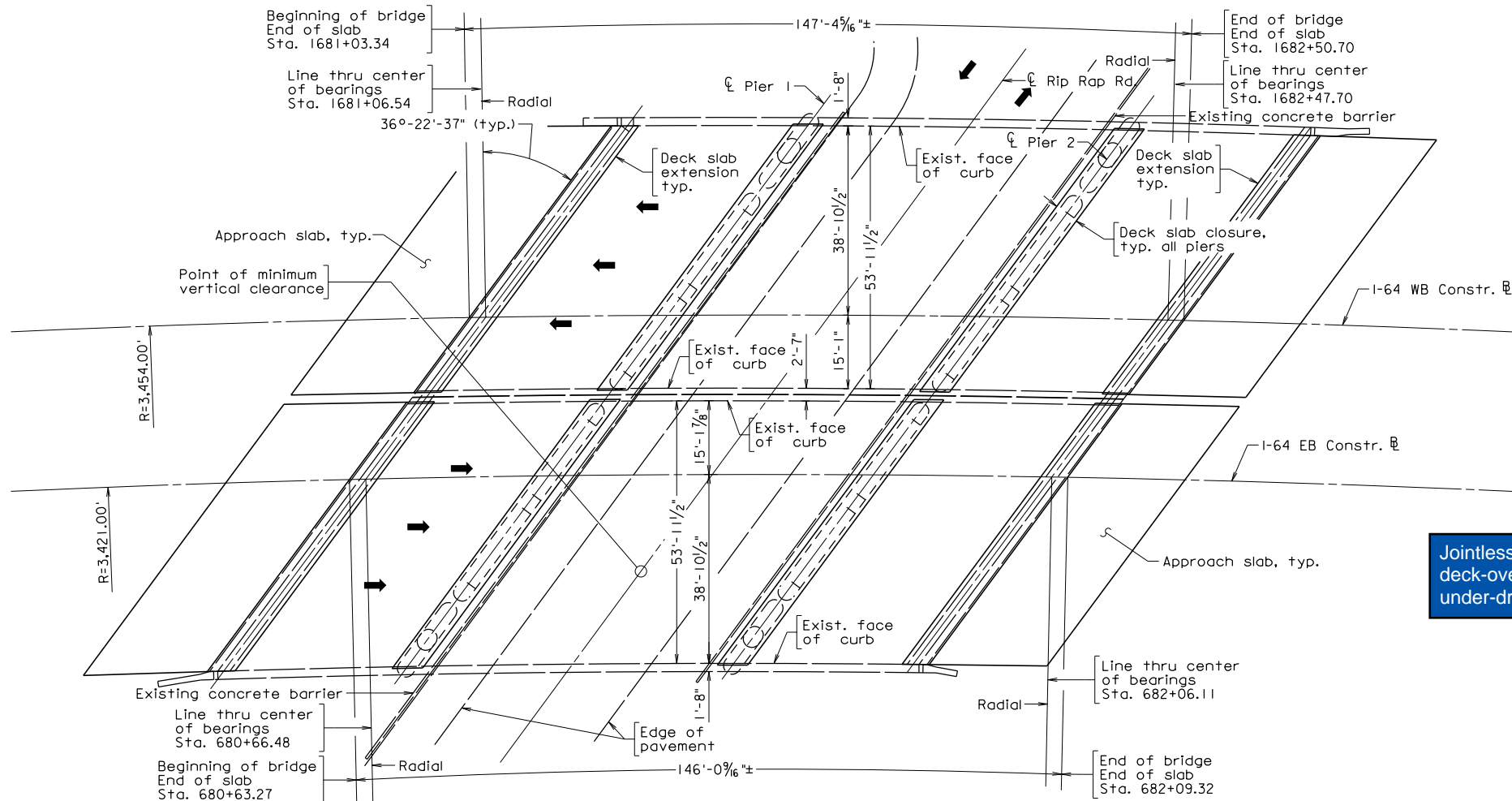
Bridge Plans



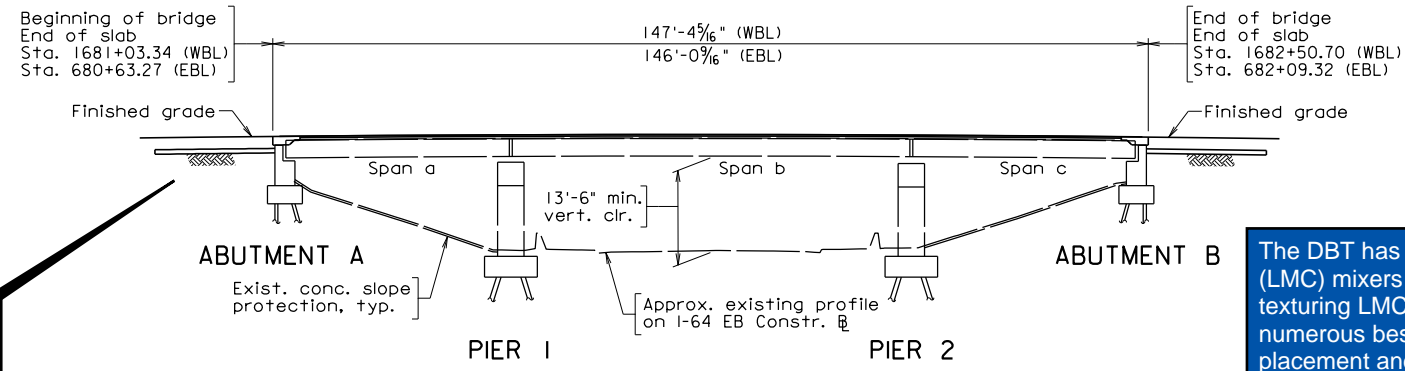




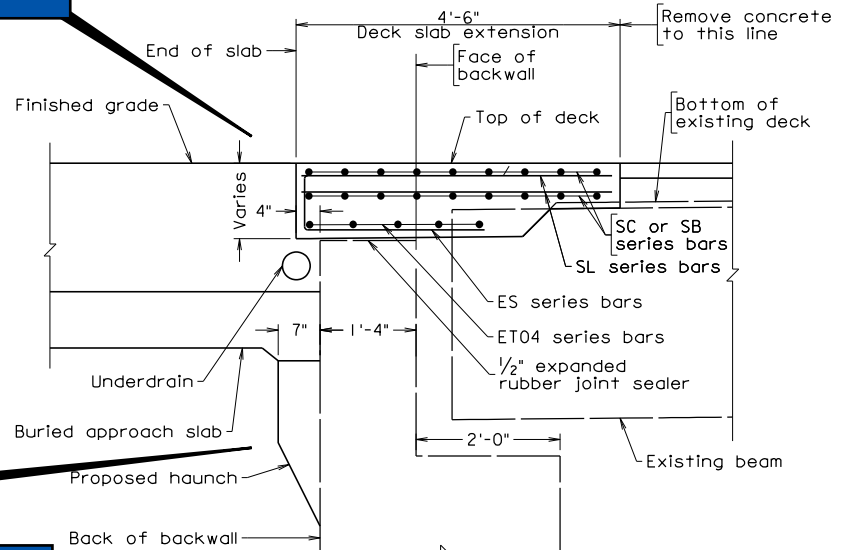
STATE	FEDERAL AID	ROUTE	PROJECT	ROUTE	STATE	PROJECT	SHEET NO.
VA.	NHPP-064-3(522)	64	0064-114-374, B659				
Federal Structure No.00000000020320				FHWA Construction and Scour Code: X281-SN			
Federal Stewardship and Oversight Code: N/A				UPC No. 119638			



ABUTMENT A PLAN ABUTMENT B



DEVELOPED SECTION ALONG EB I-64 CONSTR. EBL shown, WBL similar



ABUTMENT SECTION (A & B)



COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF TRANSPORTATION  
PROPOSED BRIDGE REPAIRS ON  
I-64 EBL/WBL OVER RIP RAP ROAD  
CITY OF HAMPTON 0.2 MI. N. OF RTE. 137  
PROJECT NO. 0064-114-374, B659

Recommended for Approval: _____ Date _____  
District Project Development Engineer

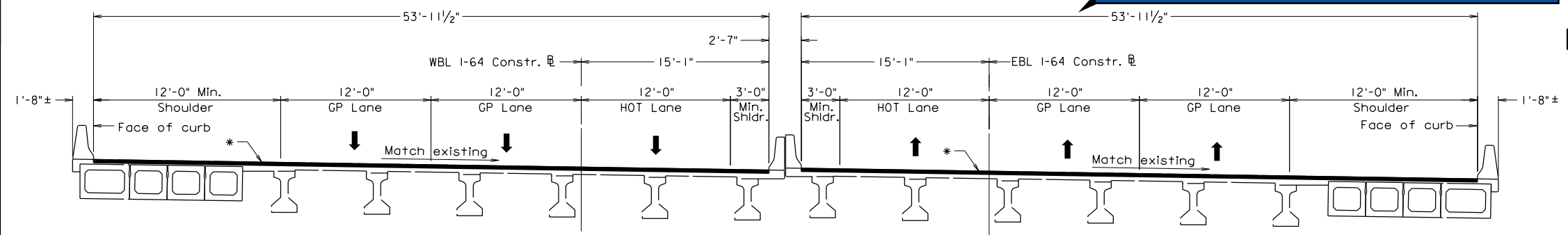
Approved: _____ Date _____  
District Administrator

Jointless structure including deck-over extension with under-drains

Adding/reconstructing haunches for better rideability and future asset performance

The DBT has a fleet of specialty Latex Modified Concrete (LMC) mixers and has been designing, mixing, placing, and texturing LMC and Rapid Set LMC for fifty years developing numerous best practices regarding surface preparation, placement and curing. Our experienced crews have worked on I-64 in Hampton Roads and will self perform this work on the Project providing a high quality surface while controlling cost and maintaining schedule

Buried approach slab (both abutments) for better rideability



FINAL - TRANSVERSE SECTION  
Scale: 3/16" = 1'-0"



STATE	FEDERAL AID		STATE		SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.	
VA.	NHPP-064-3(522)	64	0064-114-374, B672		
Federal Structure No.00000000020318			FHWA Construction and Scour Code: X281-SN		
Federal Stewardship and Oversight Code: N/A			UPC No. 119638		

DESIGN EXCEPTION(S): Page 61  
 Reduced left shoulder width to 2'-0".  
 Approved by State Structure and Bridge Engineer on xxx.

**GENERAL NOTES:**

Width: 60'-1" face-to-face of curbs, including widening of 10'-8"± on outside of WBL  
 63'-1" face-to-face of curbs, including widening of 12'-1"± on outside of EBL

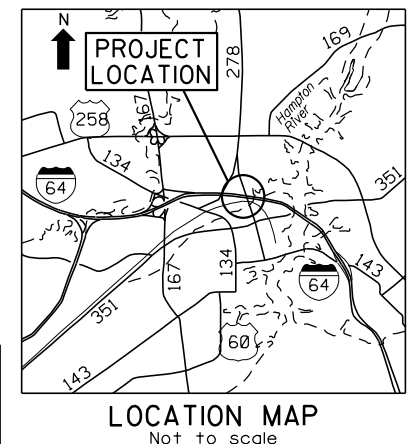
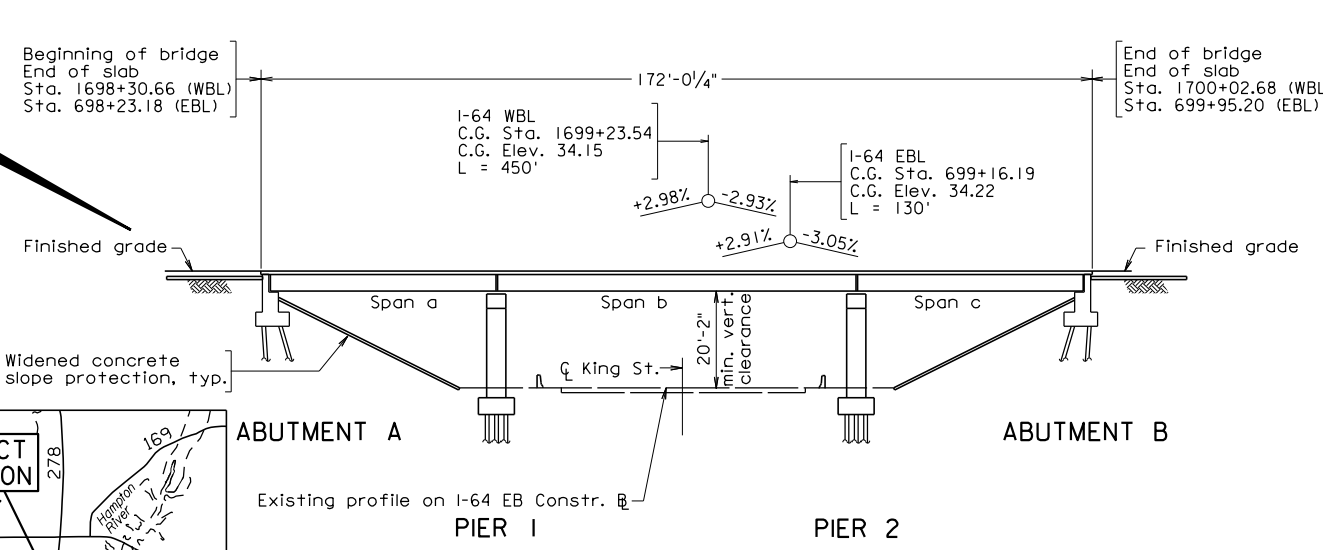
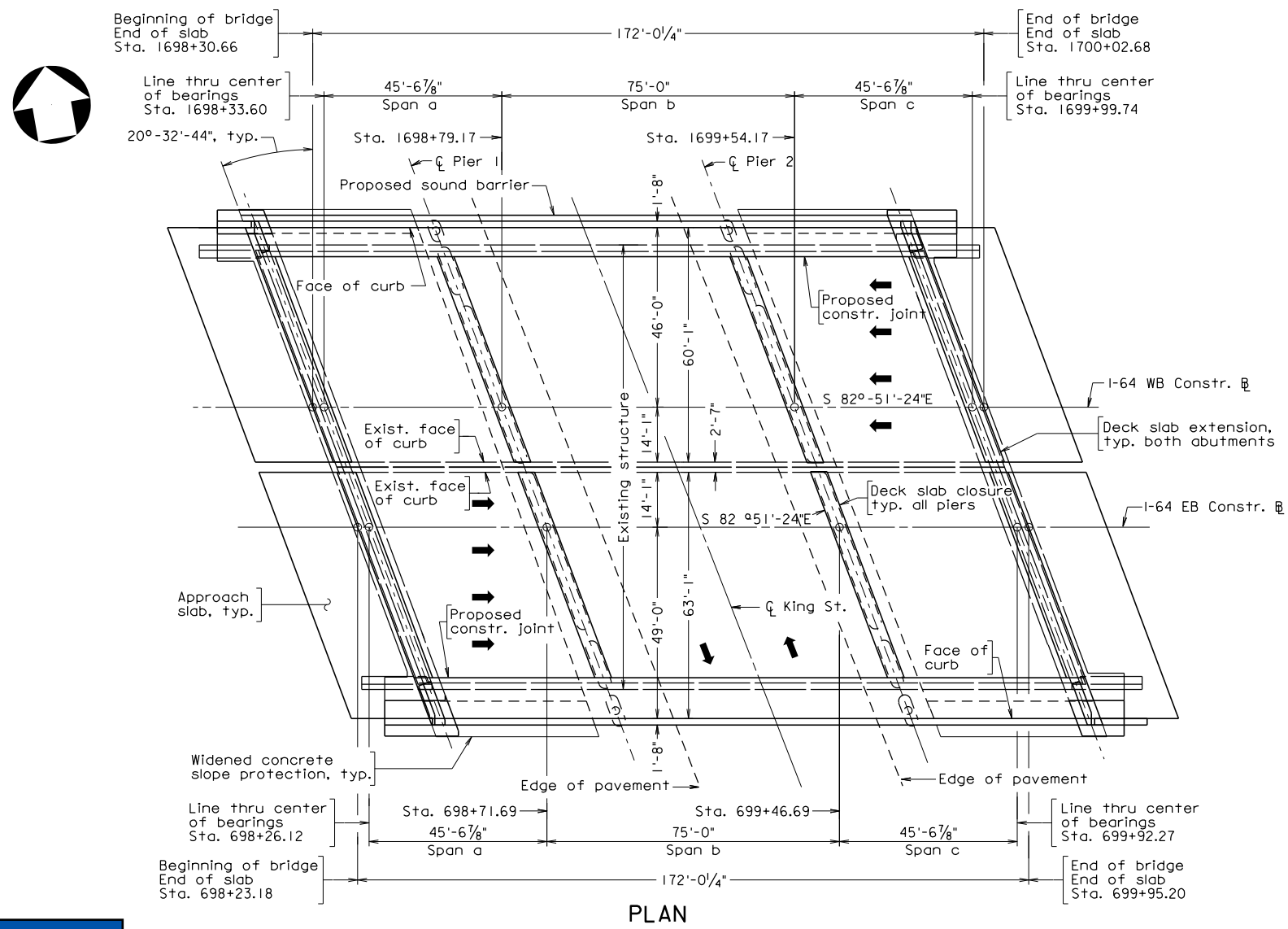
Span layout: 45'-6 7/8" - 75'-0" - 45'-6 7/8" WBL  
 45'-6 7/8" - 75'-0" - 45'-6 7/8" EBL

Capacity: HL-93 loading (widening portion only).

Specifications:  
 Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020  
 Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications.  
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revisions

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

Bridge No. of existing bridge is 2807. Existing Plan Nos. are 171-12 and 171-12A.



Jointless abutments including deck-over extension with under-drains, and buried approach slabs for better rideability

**VDOT**

COMMONWEALTH OF VIRGINIA  
 DEPARTMENT OF TRANSPORTATION  
 PROPOSED BRIDGE WIDENING AND REPAIR ON  
 I-64 EBL/WBL OVER KING STREET  
 CITY OF HAMPTON  
 PROJ. NO. 0064-114-374, B672

PLANS BY:	
COORDINATED:	
SUPERVISED:	
DESIGNED:	
DRAWN:	
CHECKED:	

No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

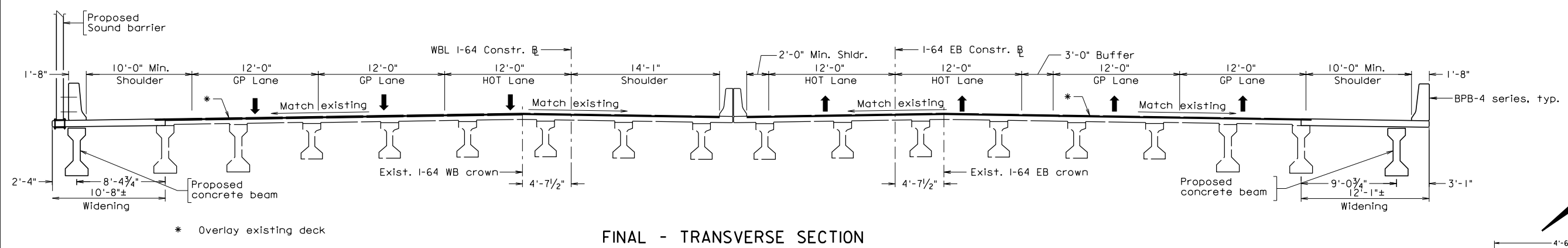
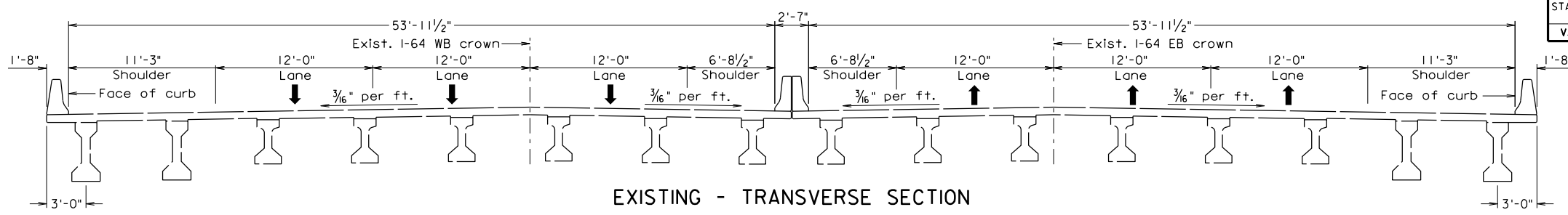
Recommended for Approval: _____ Date _____  
 District Project Development Engineer

Approved: _____ Date _____  
 District Administrator

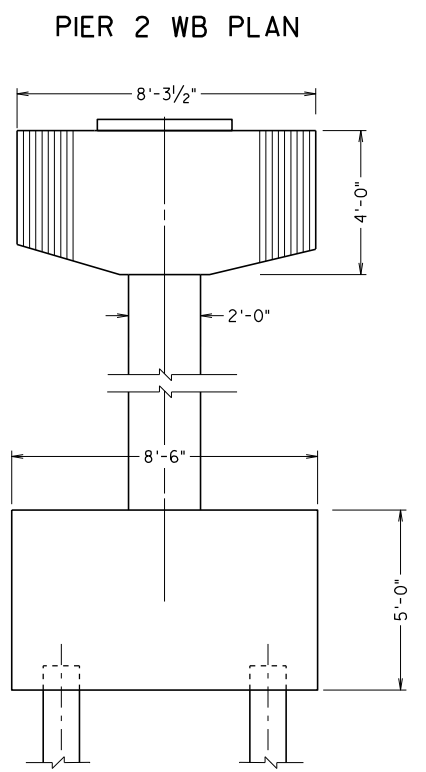
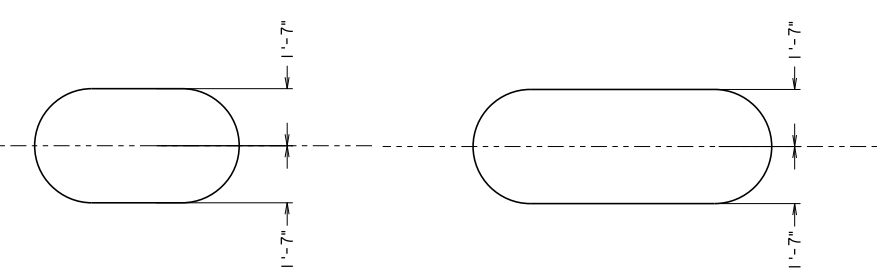
Date: May, 2022 © 2022, Commonwealth of Virginia

171-12B

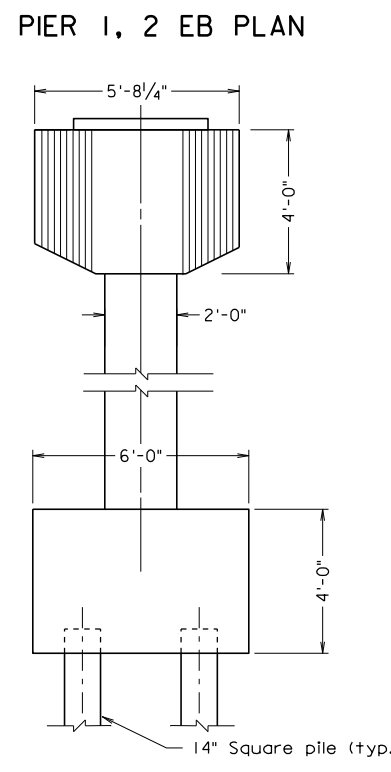
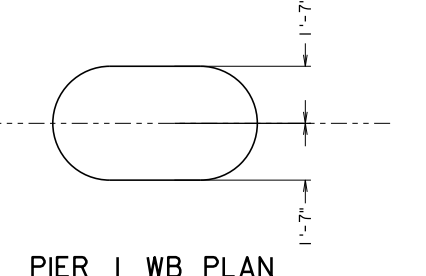
Scale: 1" = 20'



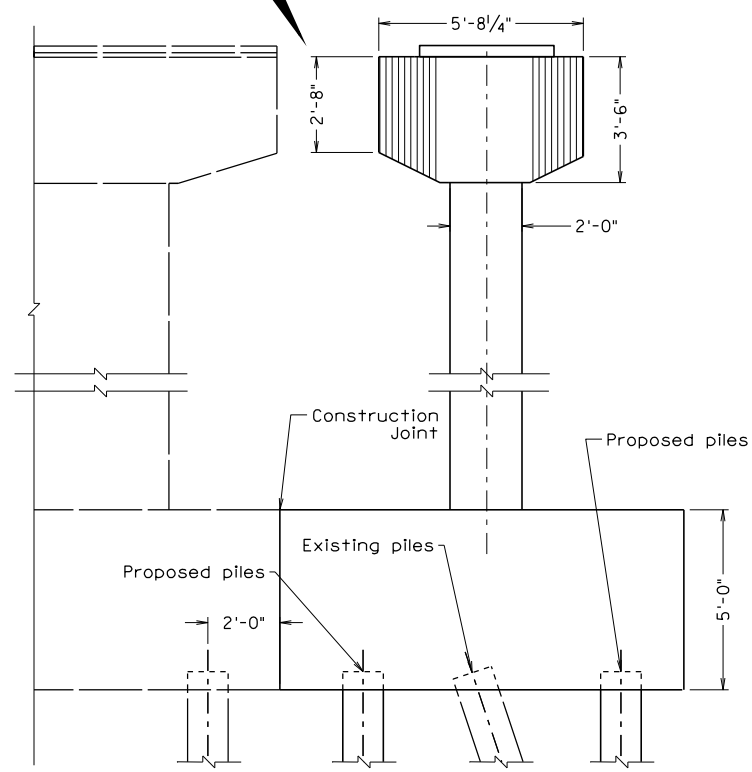
Jointless structure including deck-over extension with under-drains



Unique solution for Pier 1 WB that enhances the existing eccentric pier stability

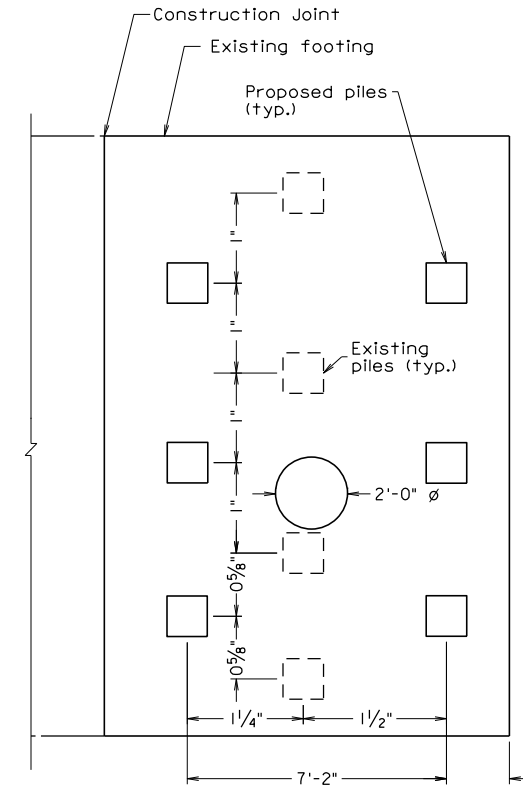


PIER 2 WB ELEVATION

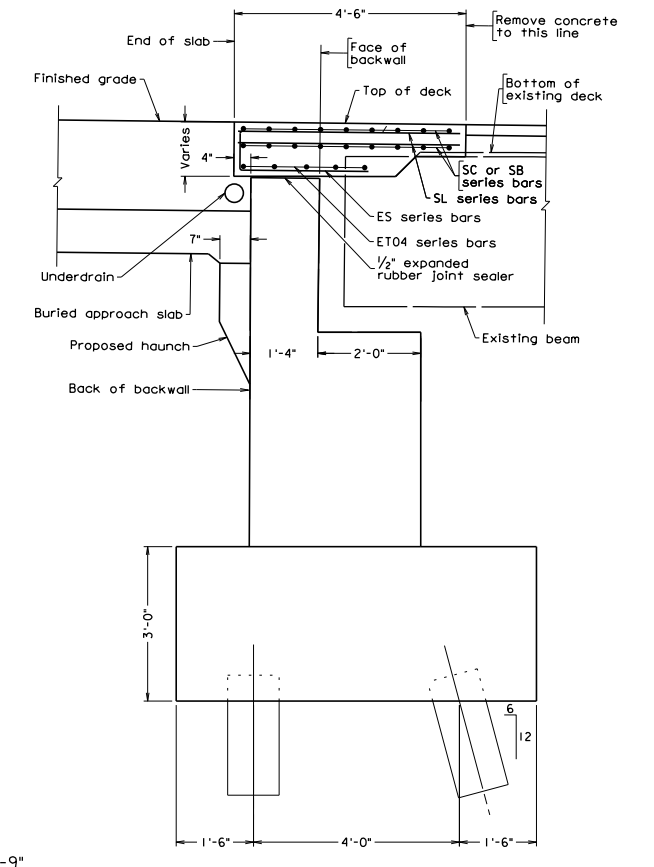


PIER 1, 2 EB ELEVATION

Scale: 3/16" = 1'-0"



Unique solution for Pier 1 WB that minimizes load sharing between new and existing piles

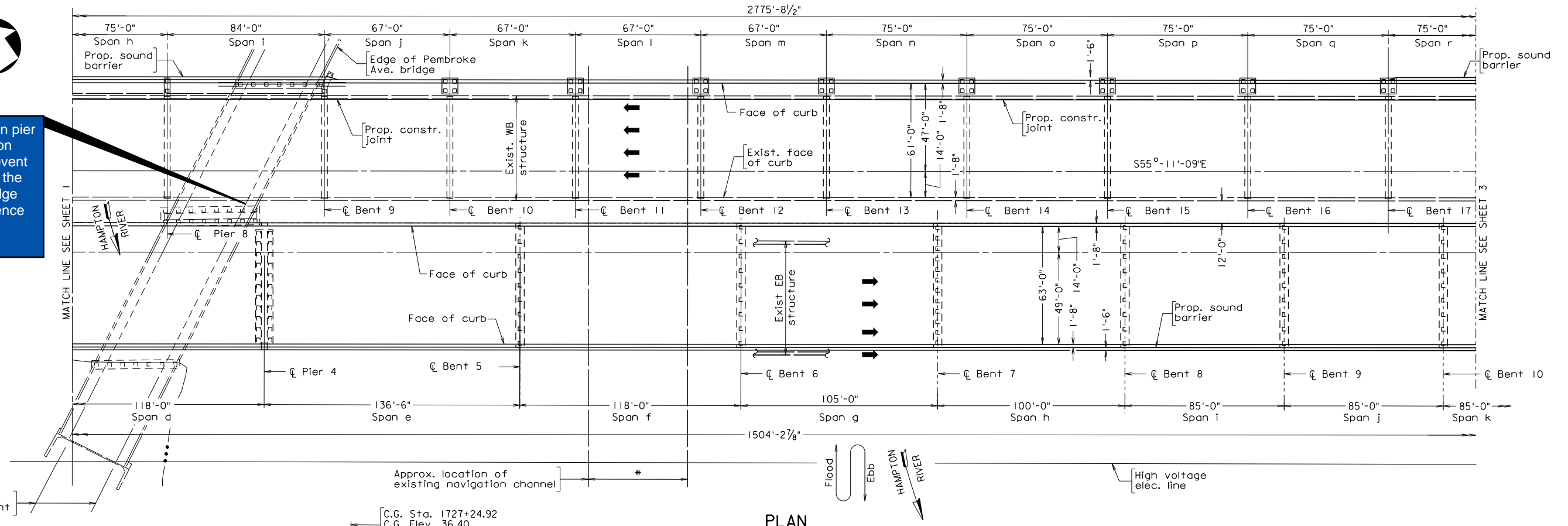


COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
TYPICAL SECTIONS & SUBSTRUCTURE DETAILS					
No.	Description	Date	Designed: .....	Date	Plan No.
			Drawn: .....	May, 2022	171-12B
			Checked: .....		
Revisions					

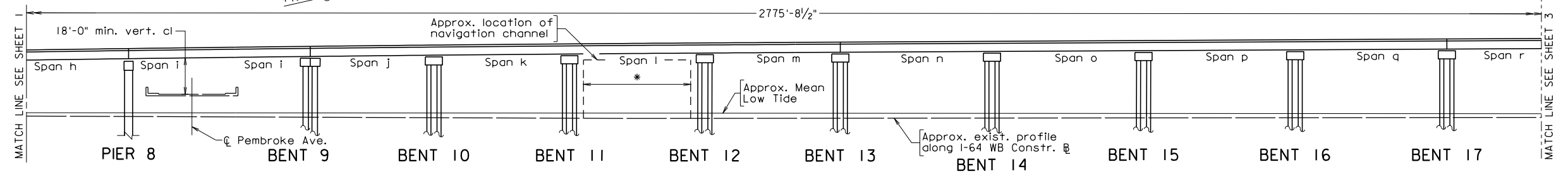




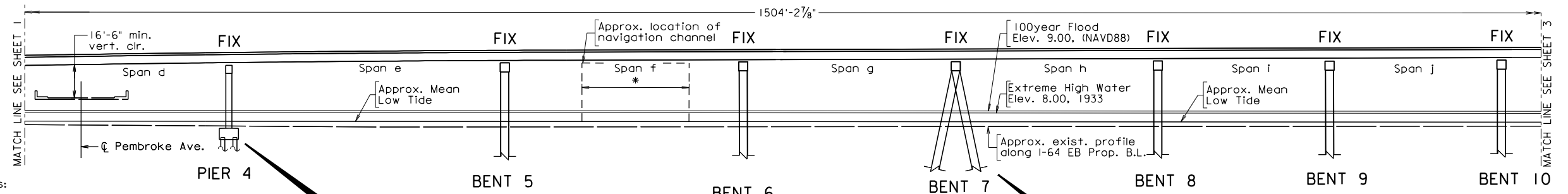
Use of multi-column pier on EB, supported on vertical piles to prevent adverse impact on the Pembroke ave bridge existing piles influence zone



PLAN



DEVELOPED SECTION ALONG I-64 WB WIDENING



DEVELOPED SECTION ALONG I-64 EB CONSTR. B

Notes:

- * Channel width and required clearances to be determined by the U.S. Coast Guard.
- Pembroke Ave bridge substructure is shown based on as-built plans. Updated survey for Pembroke Ave bridge substructure has not been incorporated into these plans.

EB Bridge span reconfiguration to de-conflict the new and existing EB bridge pier/foundation.

Use of multi-column pier similar to WB pier 8 and bent 9, for View-shed harmonization

Optimized use of the precast concrete piles to create an A-frame to enhance the global stability of the bridge

Scale: 1" = 30'

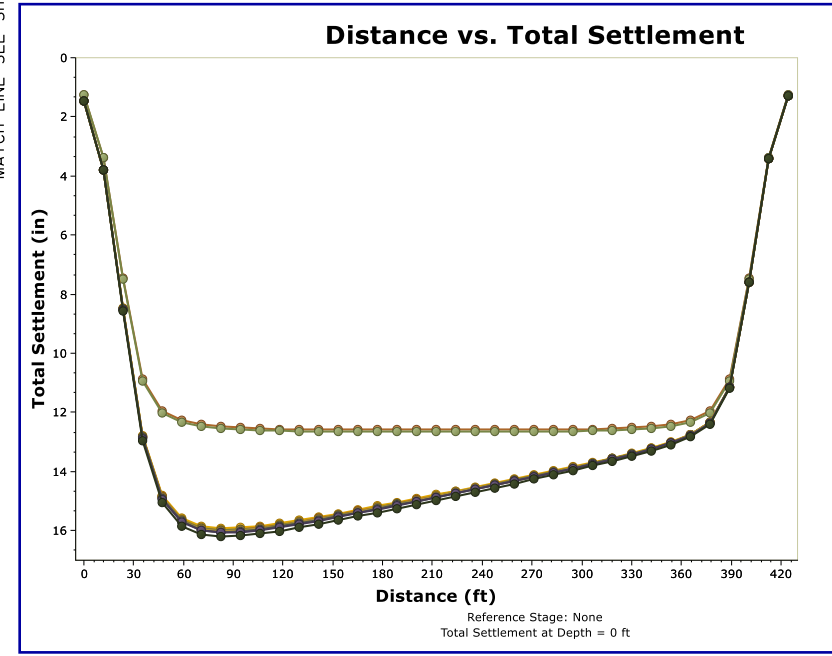
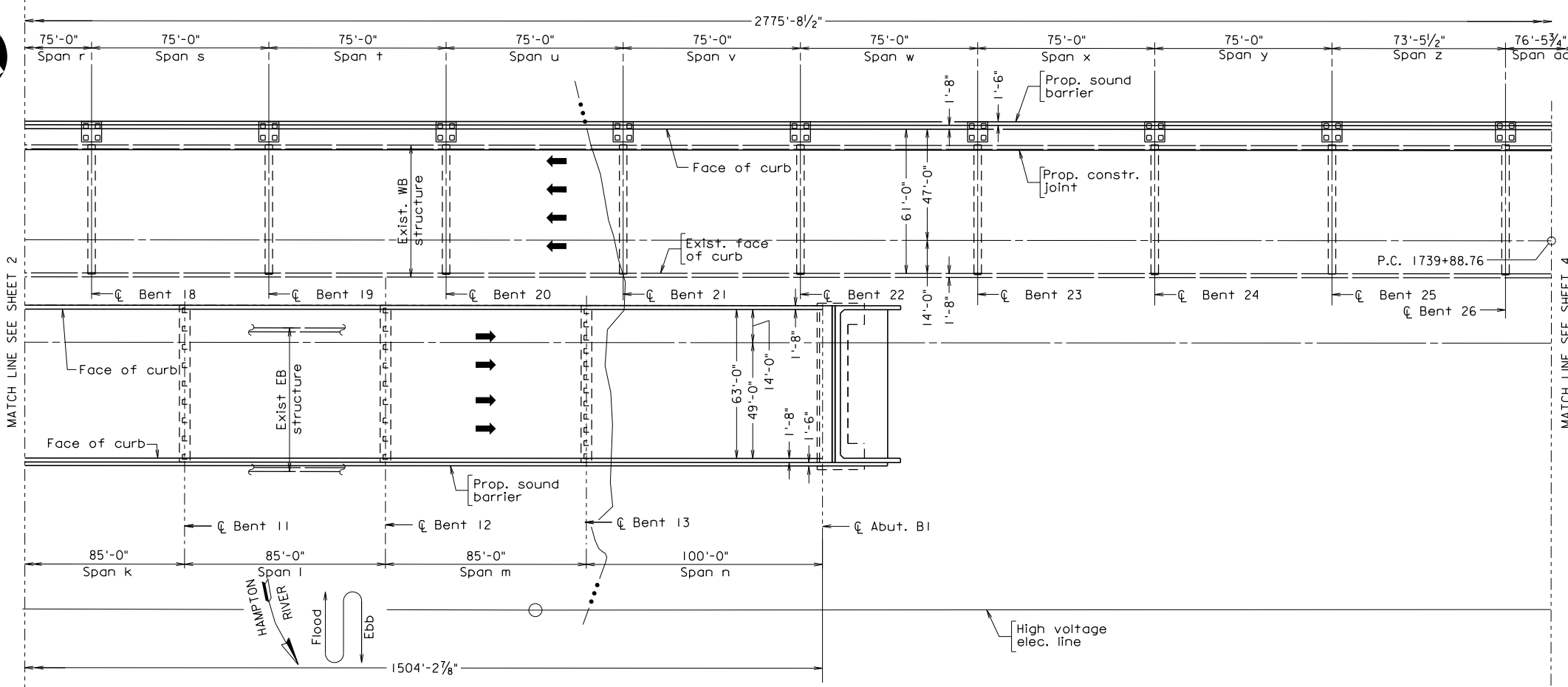
EXP U.S. SERVICES, INC.  
WASHINGTON, DC  
STRUCTURAL ENGINEER

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
PLAN AND DEVELOPED SECTION				
No.	Description	Date	Designed: .....	Date
			Drawn: .....	Plan No.
			Checked: .....	Sheet No.
Revisions			May, 2022	171-14B

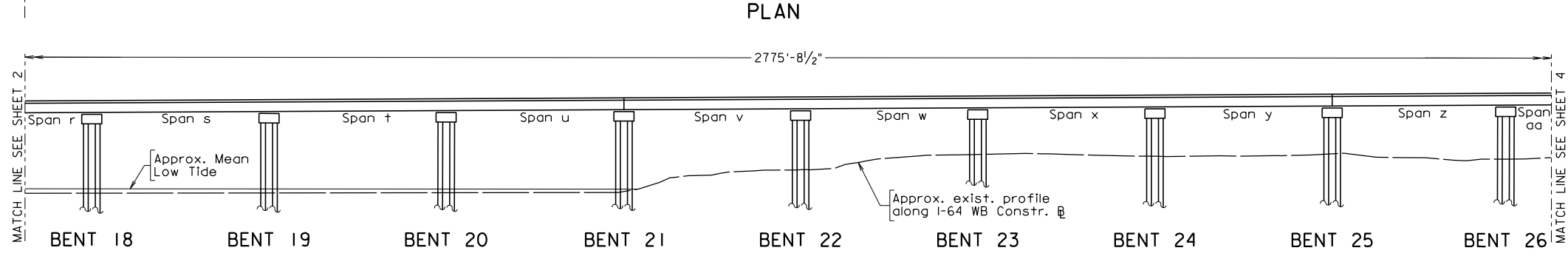




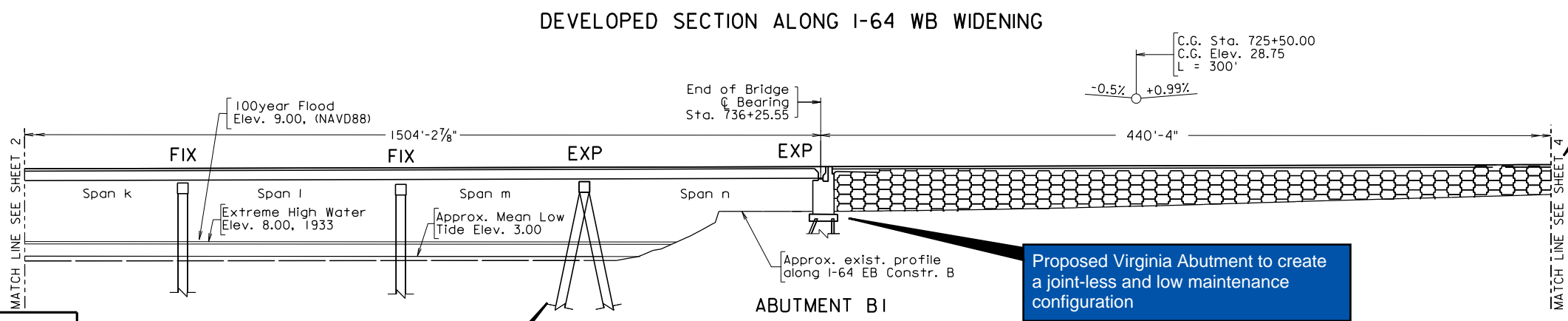
STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-064-3(522)	64	0064-114-374, B673, B674



Advanced settlement analysis and control measures have been performed over the referenced plugged/filled areas ensuring settlement can occur within the projects schedule.



Introducing retained fill block replacing 440'+/- bridge crossing. The proposed design will reduce the maintenance and inspection as required for the bridge structure compared to the RFP Conceptual Plans.



EB Bridge span reconfiguration to de-conflict the new and existing EB bridge pier/foundation.

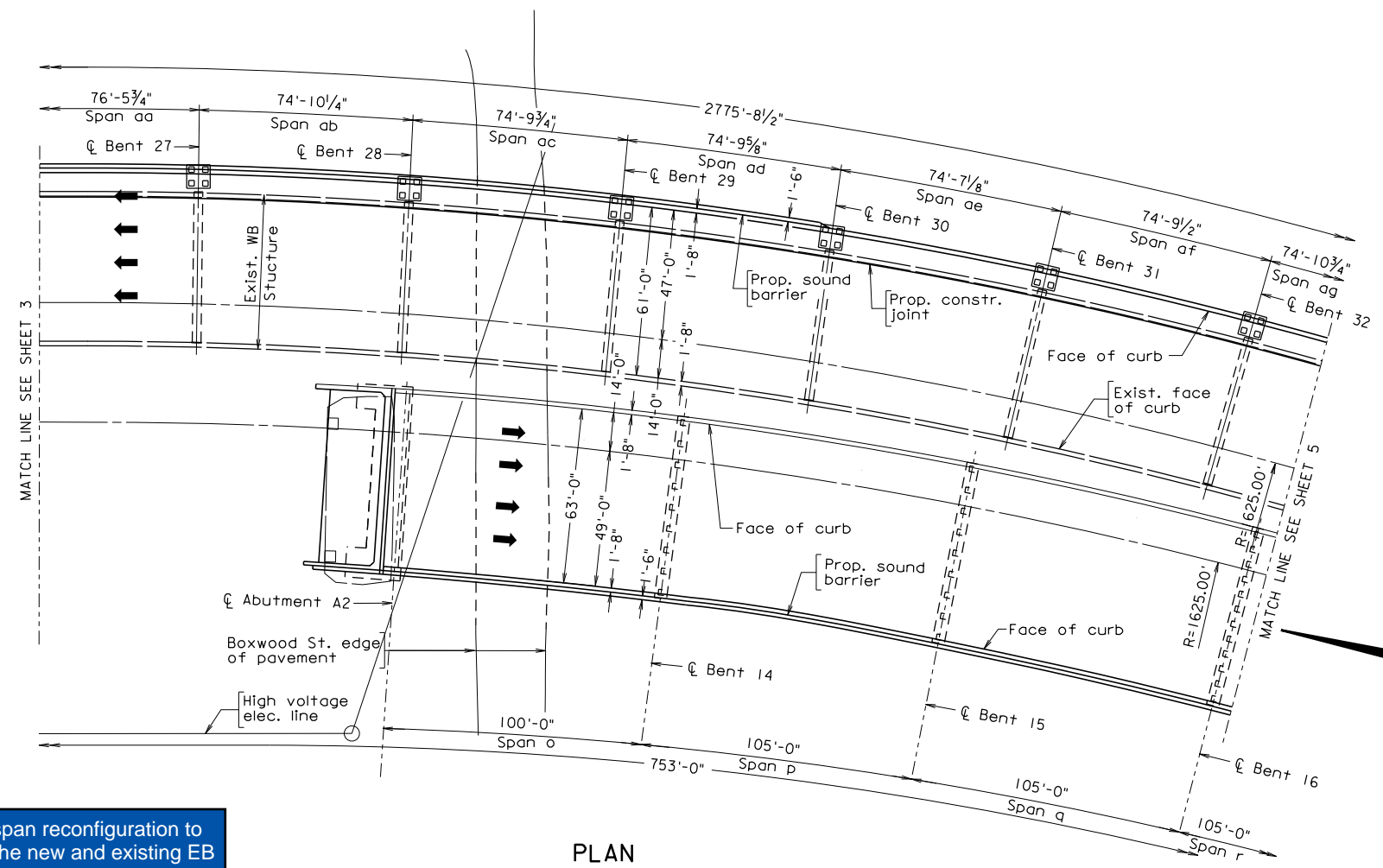
Optimized use of the precast concrete piles to create an A-frame to enhance the global stability of the bridge

Proposed Virginia Abutment to create a joint-less and low maintenance configuration

EXP U.S. SERVICES, INC.  
WASHINGTON, DC  
STRUCTURAL ENGINEER

Scale: 1" = 30'

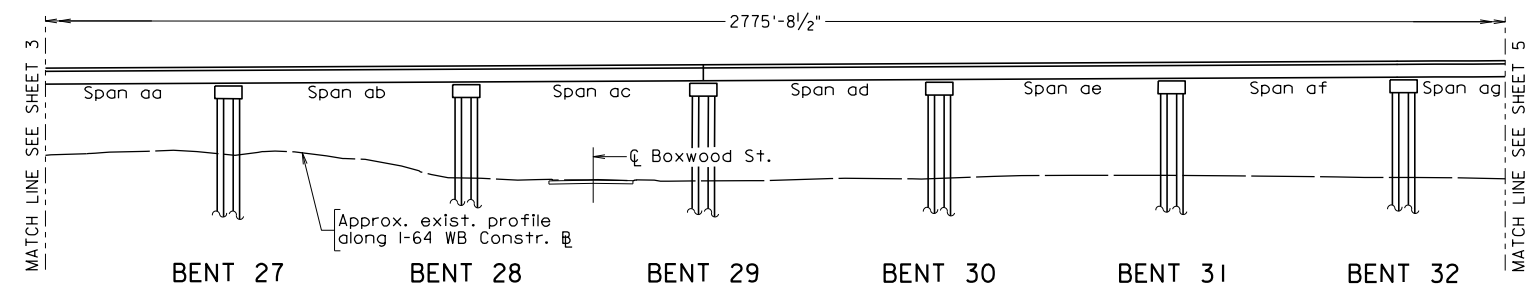
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
PLAN AND DEVELOPED SECTION				
No.	Description	Date	Designed: .....	Date
Revisions		Checked: .....	May, 2022	171-14B



PLAN

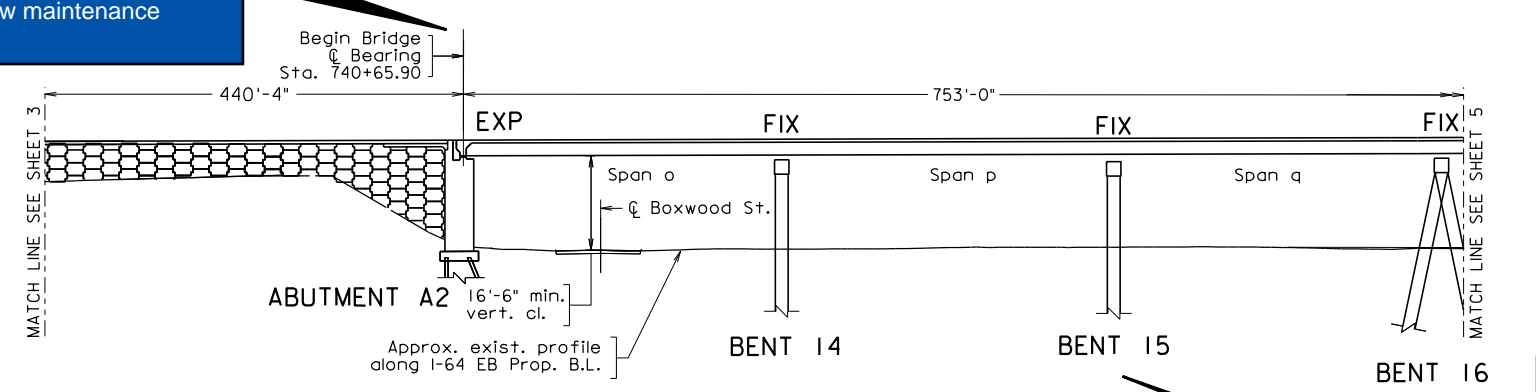
Horizontal alignment has been enhanced with increased radius from 1539' compared to RFP Conceptual plans.

EB Bridge span reconfiguration to de-conflict the new and existing EB bridge pier/foundation.



DEVELOPED SECTION ALONG I-64 WB WIDENING

Proposed Virginia Abutment to create a joint-less and low maintenance configuration

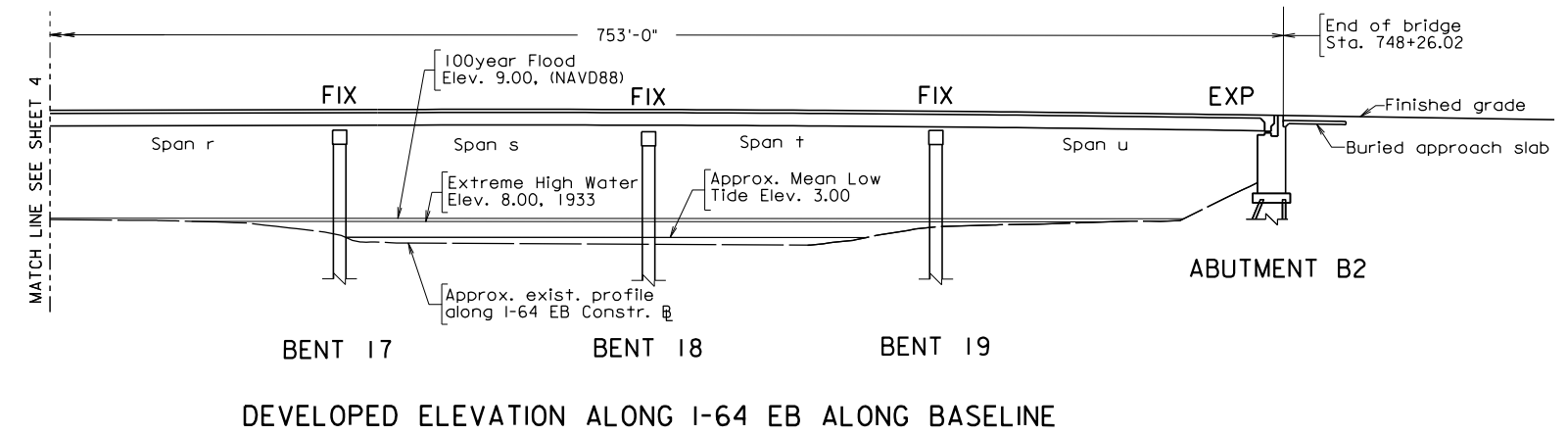
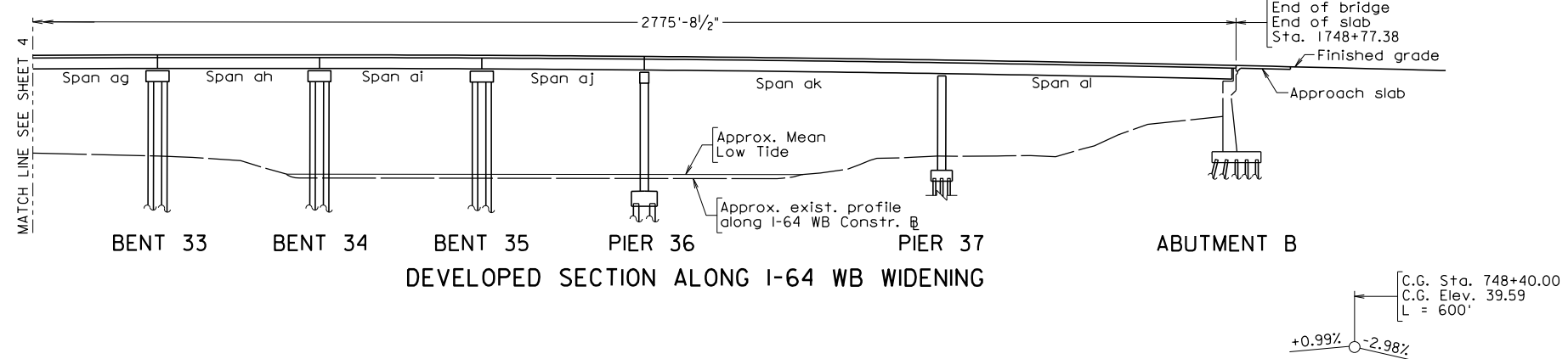
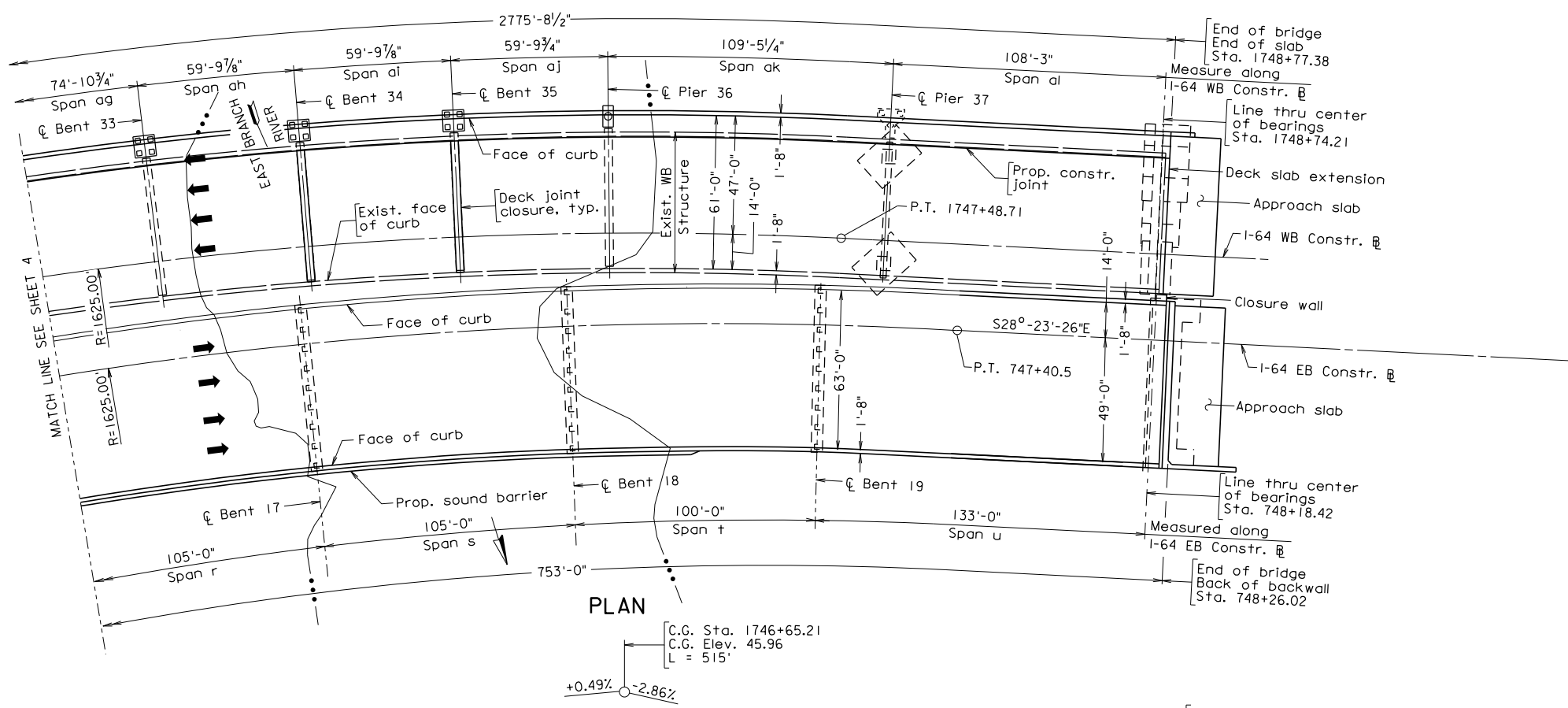


DEVELOPED ELEVATION ALONG I-64 EB ALONG BASELINE

Conventional substructure selected between S. Boxwood and East Branch of the Hampton River as geotechnical analysis indicated that settlement is to extensive and time consuming to construct within project schedule.

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
PLAN AND DEVELOPED SECTION				
No.	Description	Date	Designed: .....	Date
			Drawn: .....	Plan No.
			Checked: .....	Sheet No.
Revisions			May, 2022	171-14B





**EB Bridge span reconfiguration to de-conflict the new and existing EB bridge pier/foundation.**

EXP U.S. SERVICES, INC.  
WASHINGTON, DC  
STRUCTURAL ENGINEER

Scale: 1" = 30'

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
<b>PLAN AND DEVELOPED SECTION</b>				
No.	Description	Date	Designed: .....	Date
			Drawn: .....	Plan No.
			Checked: .....	Sheet No.
Revisions			May. 2022	171-14B

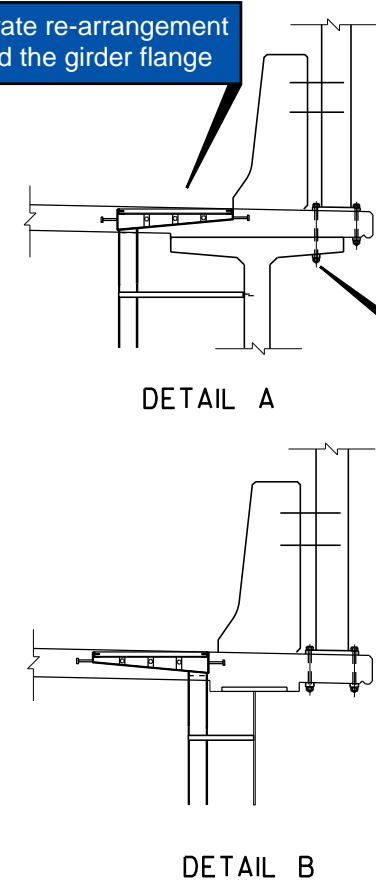
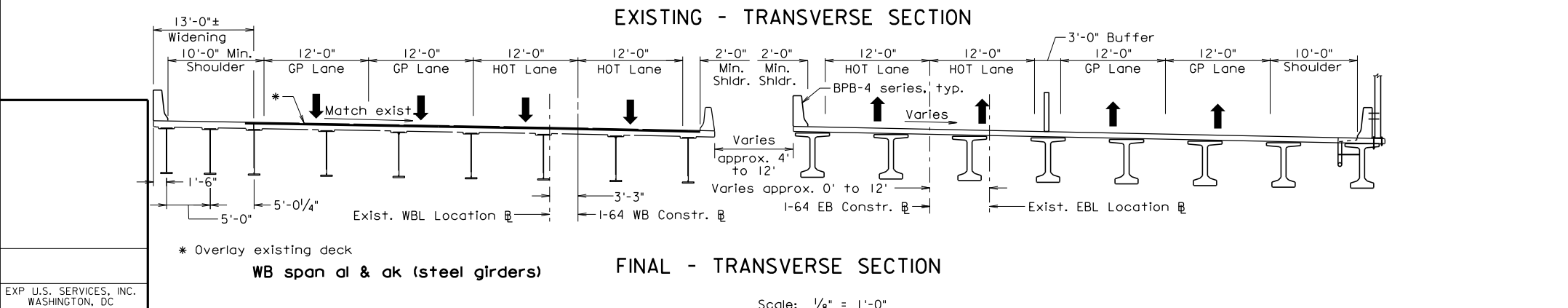
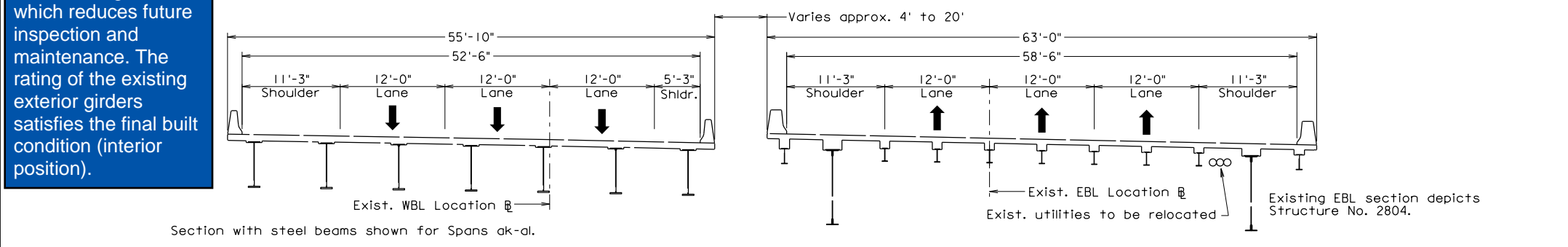
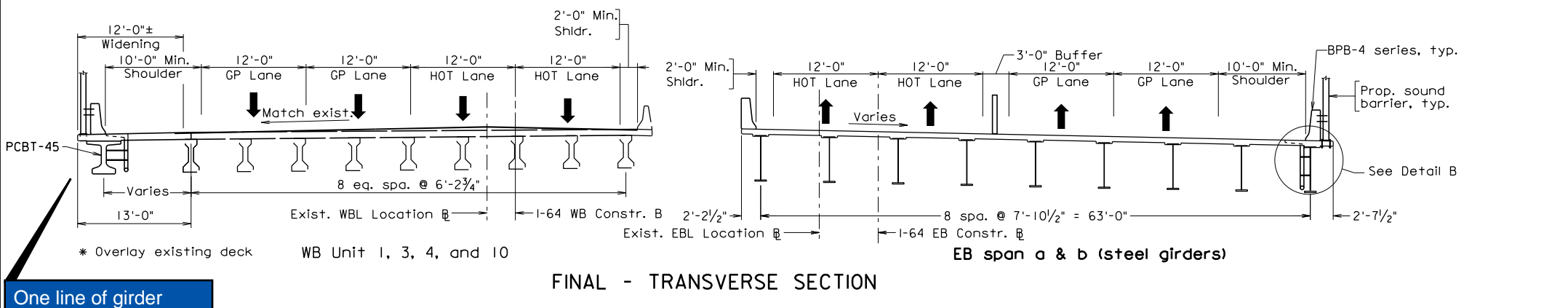
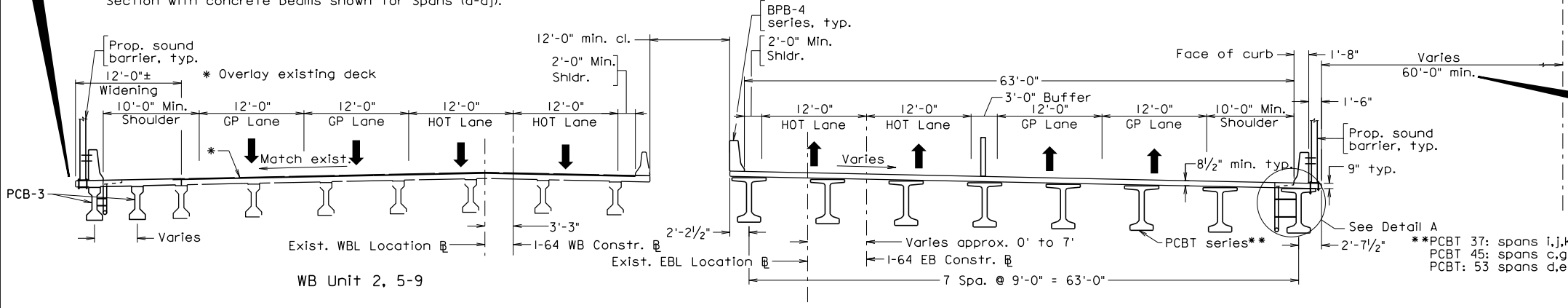
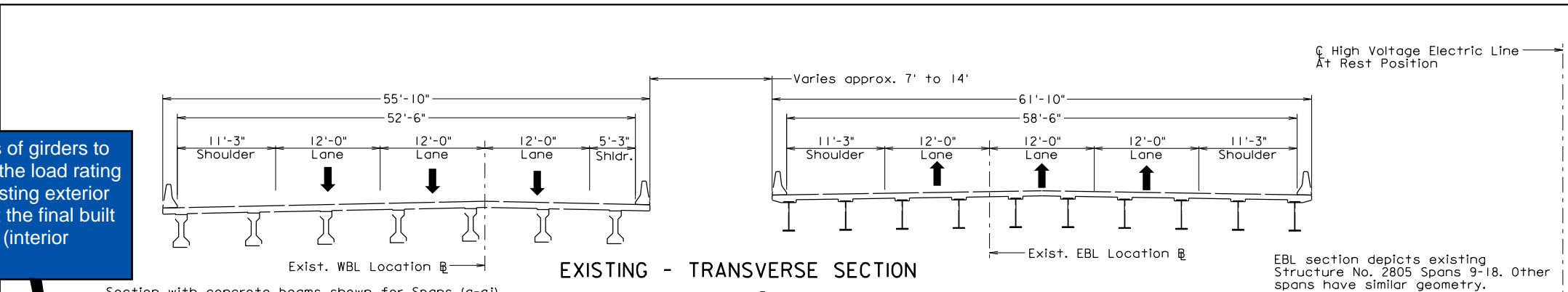
Two lines of girders to increase the load rating of the existing exterior girders at the final built condition (interior position).

Using low permeability, low shrinkage concrete and corrosion resistant reinforcing steel (Class III Stainless Steel) in the superstructure results in a low maintenance structure.

Optimized EB horizontal alignment resulting significant increase in the clearance to the adjacent high voltage electric line from RFP requirement of 32'-11" min. to 60'-0" +/-

Inlet grate re-arrangement to avoid the girder flange

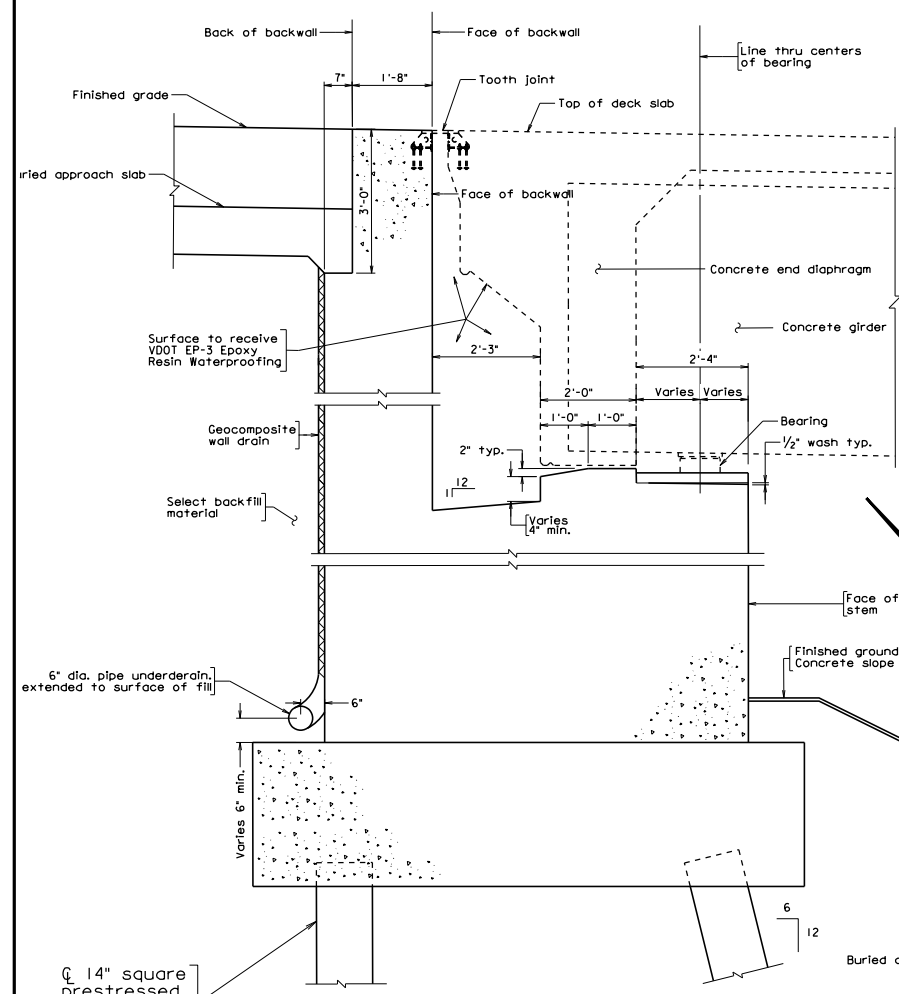
Special detail to accommodate thru-flange bolts for soundwalls, reducing deck slab cantilever



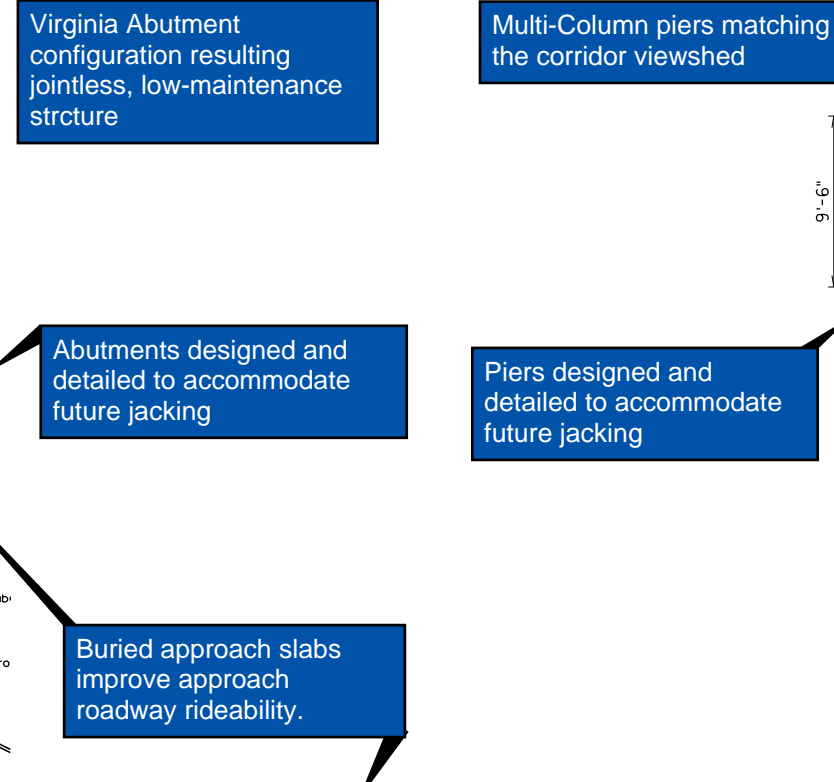
One line of girder which reduces future inspection and maintenance. The rating of the existing exterior girders satisfies the final built condition (interior position).

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
<b>TRANSVERSE SECTIONS</b>					
No.	Description	Date	Designed: .....	Date	Plan No.
			Drawn: .....	May, 2022	171-14B
			Checked: .....		
Revisions					

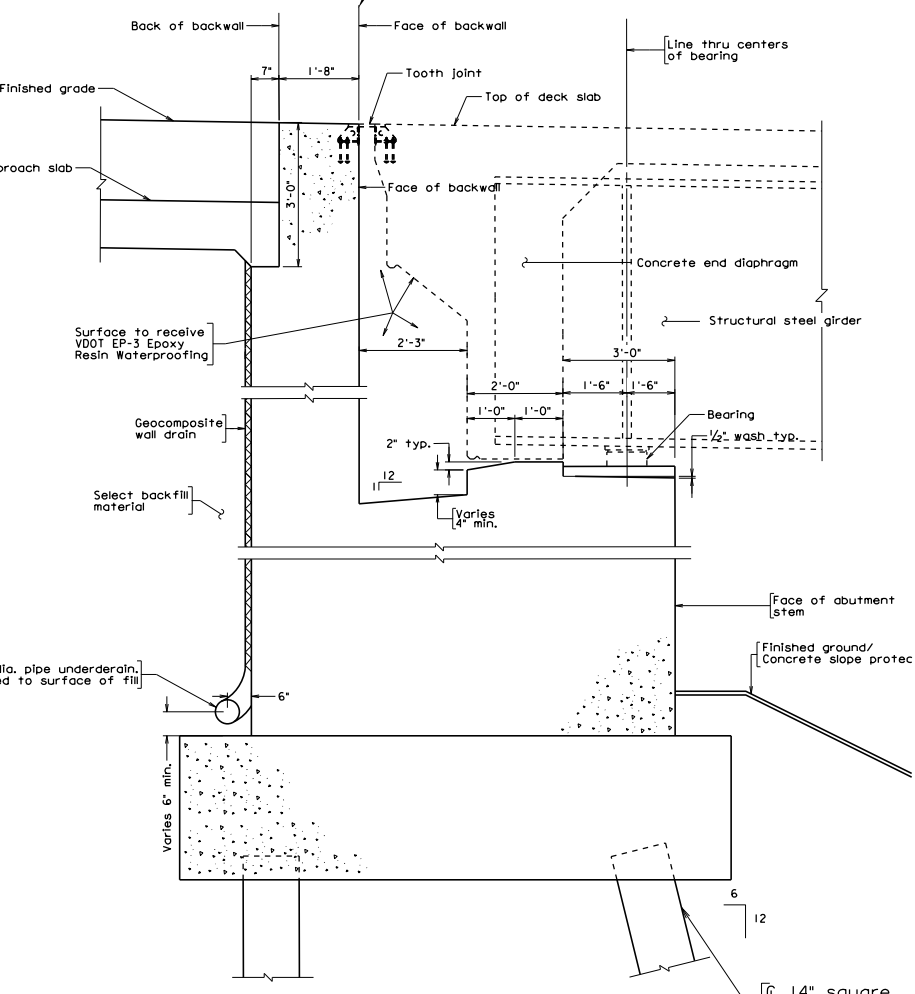




**VIRGINIA ABUTMENT B1, A2, B2 (CONCRETE)**  
Scale: 1/2" = 1'-0"



**VIRGINIA ABUTMENT A1 (STEEL)**  
Scale: 1/2" = 1'-0"



Scale: 1/2" = 1'-0" unless otherwise noted

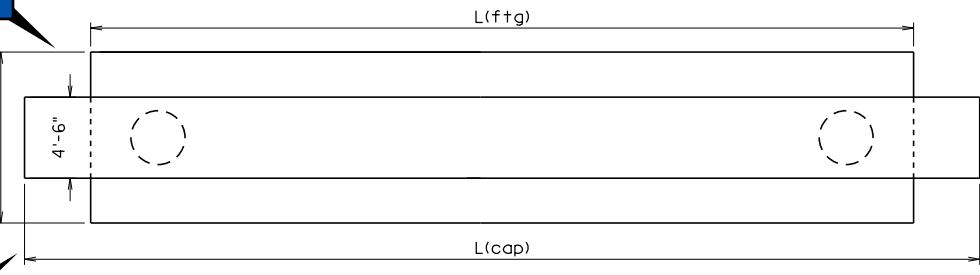
Virginia Abutment configuration resulting jointless, low-maintenance structure

Multi-Column piers matching the corridor viewshed

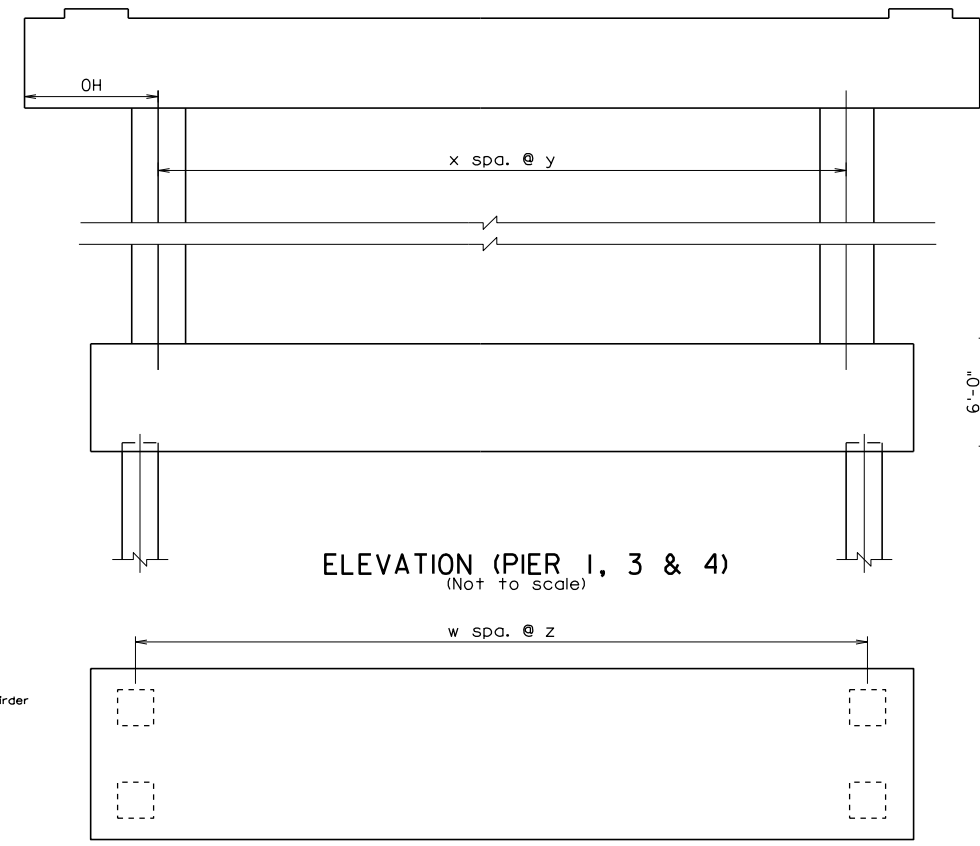
Abutments designed and detailed to accommodate future jacking

Piers designed and detailed to accommodate future jacking

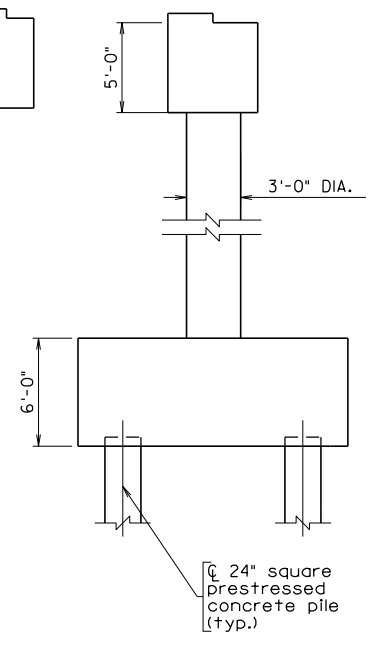
Buried approach slabs improve approach roadway rideability.



**PLAN (PIER 1, 3 & 4)**  
(Not to scale)



**ELEVATION (PIER 1, 3 & 4)**  
(Not to scale)

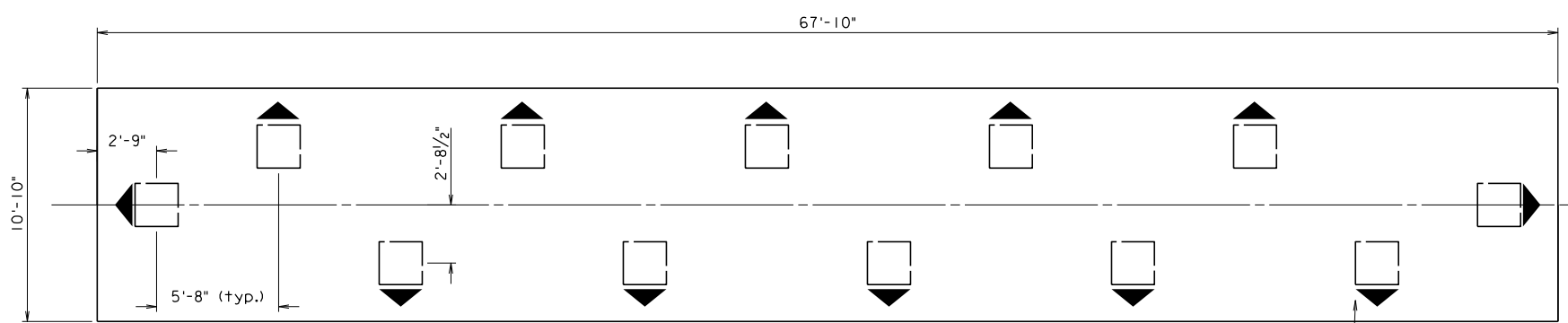


**SECTION VIEW**  
(Not to scale)

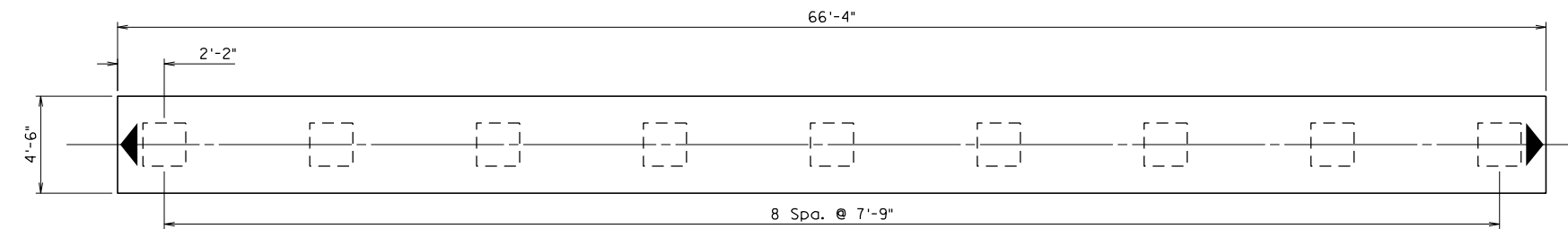


**FOOTING PLAN (PIER 1, 3 & 4)**  
(Not to scale)

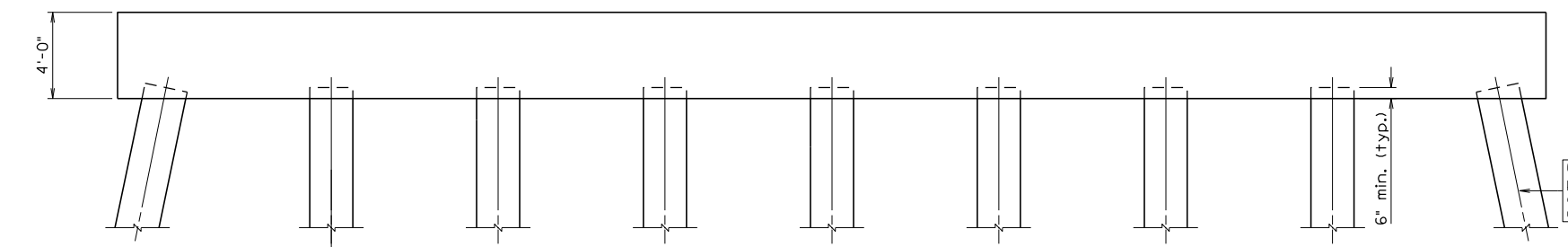
Pier	L (ftg)	L (cap)	x	y	OH	w	z
Pier 1	106'-0"	106'-0"	6	17'-8"	-	18	5'-8"
Pier 3	60'-6"	67'-10"	3	15'-5"	7'-5"	10	5'-9"
Pier 4	60'-6"	67'-10"	3	15'-5"	7'-5"	10	5'-9"



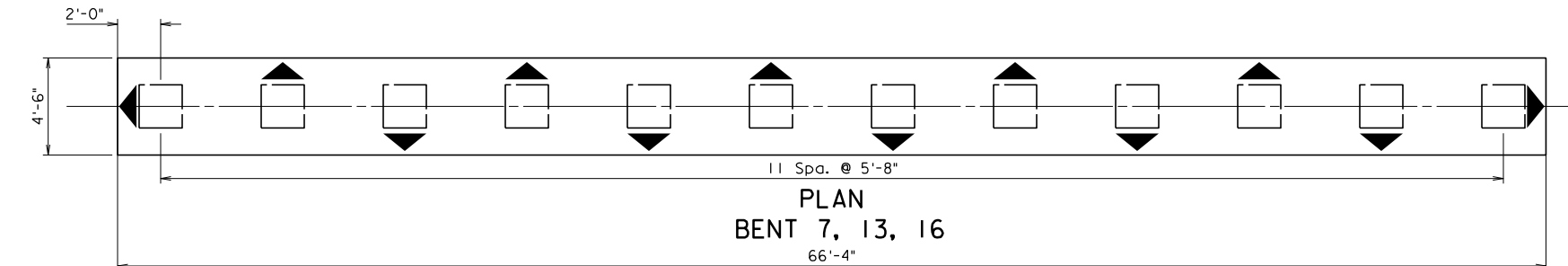
PLAN  
VIRGINIA PIER



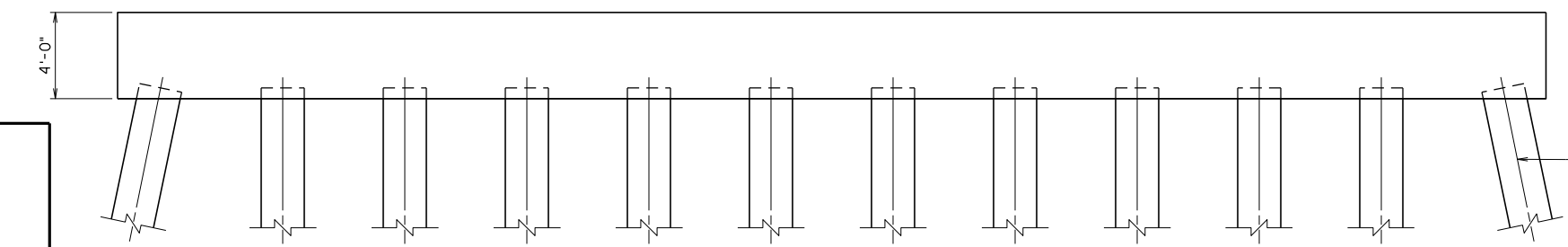
PLAN  
BENT 5, 6, 8-12, 14, 15, 17-19



ELEVATION  
BENT 5, 6, 8-12, 14, 15, 17-19



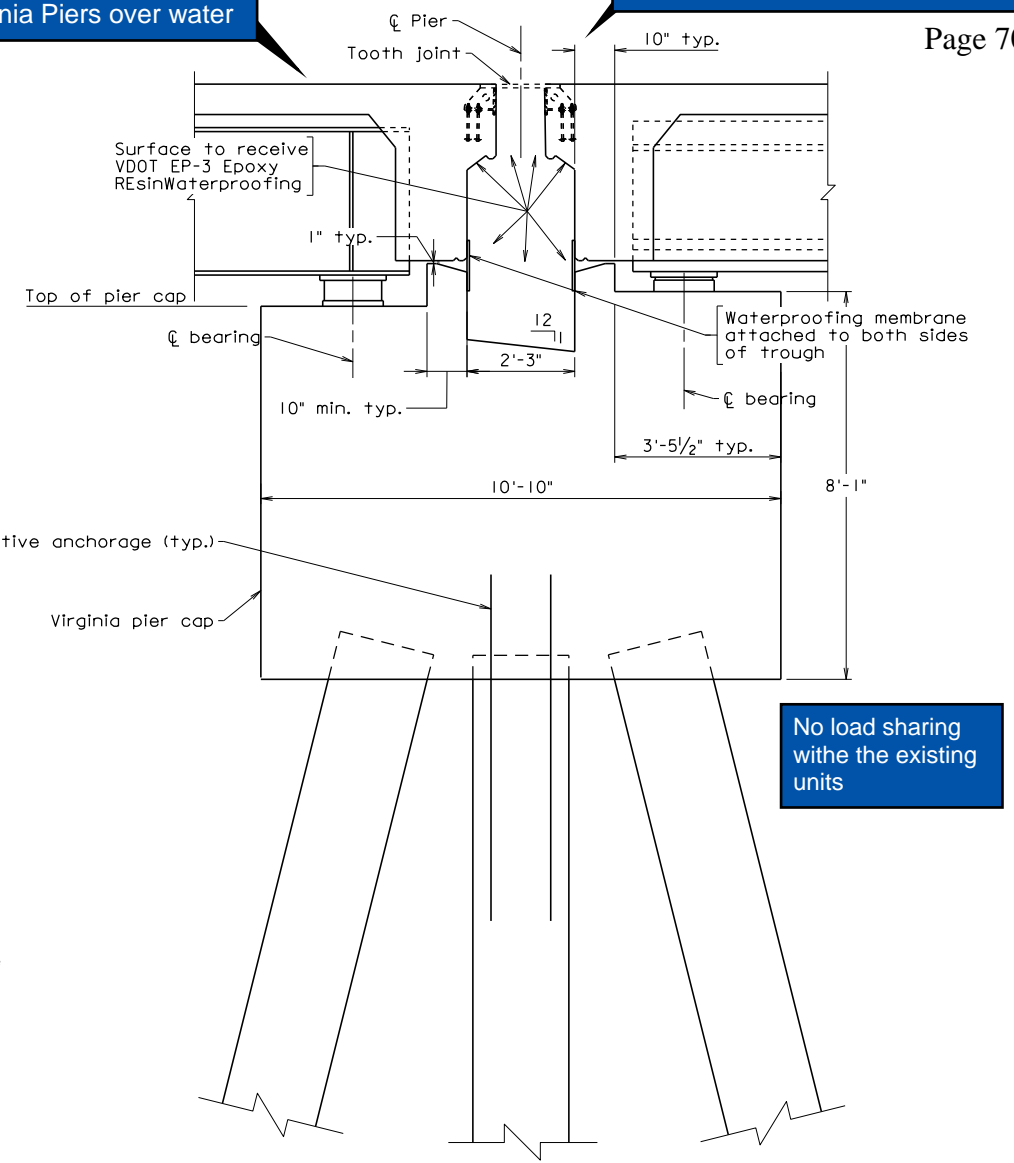
PLAN  
BENT 7, 13, 16



ELEVATION  
BENT 7, 13, 16

Reducing the number of Virginia Piers to 1  
No Virginia Piers over water

Virginia Pier resulting in jointless, low-maintenance structure



TYPICAL SECTION  
VIRGINIA PIER

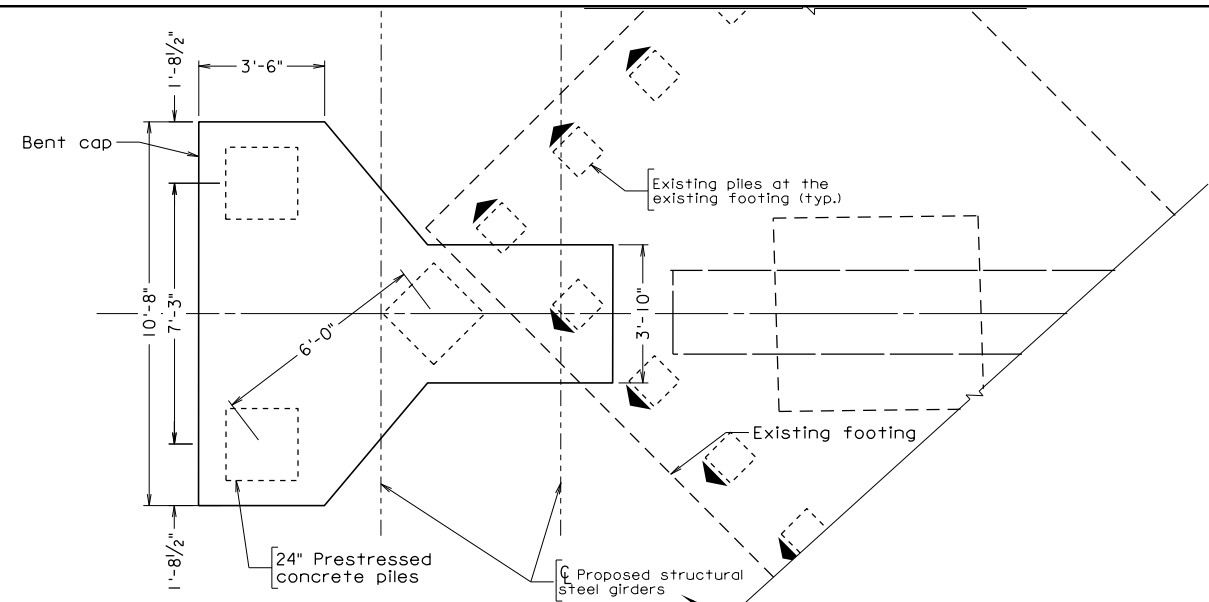
No load sharing with the existing units

Multi-directional battered precast preprocessed piles to enhance stability at Virginia Pier

Legend:  
▼ Indicates batter direction

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
BRIDGE B-673 I-64 EB SUBSTRUCTURE DETAILS					
No.	Description	Date	Designed: .....	Date	Plan No.
			Drawn: .....	May, 2022	171-14B
Revisions			Checked: .....		Sheet No.





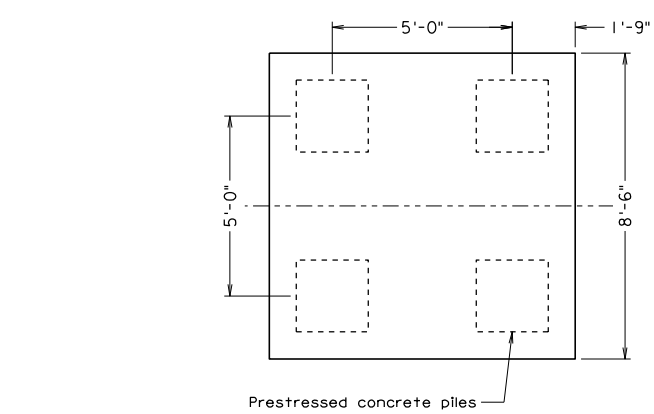
PLAN (BENT 37)

Unique design to avoid conflict with th existing pier/foundation

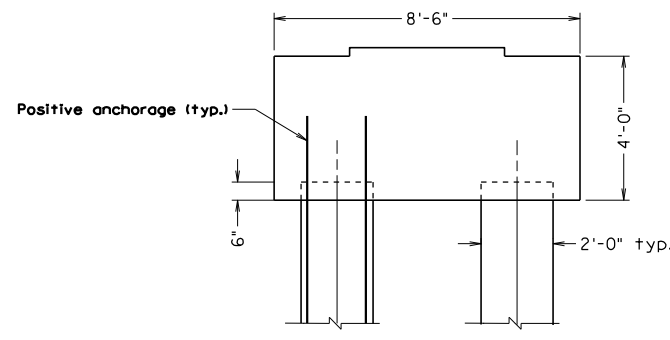
Unique geometric characteristic to support deep beam/shear element

Unique design to avoid conflict with th existing pier/foundation

No load sharing with the existing units

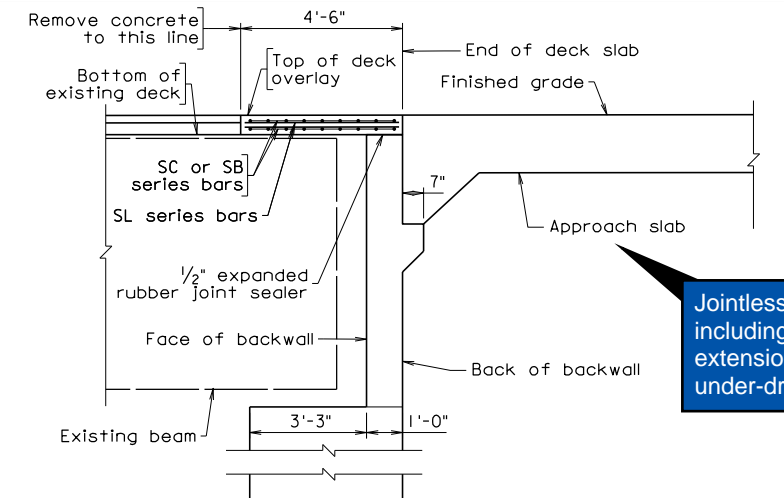


PLAN (BENTS)



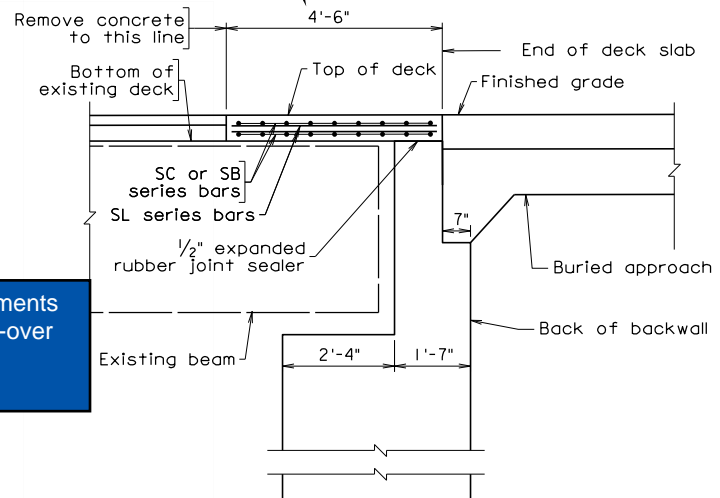
ELEVATION (BENTS)

Jointless abutments including deck-over extension with under-drains, and buried approach slabs for better rideability



ABUTMENT B SECTION

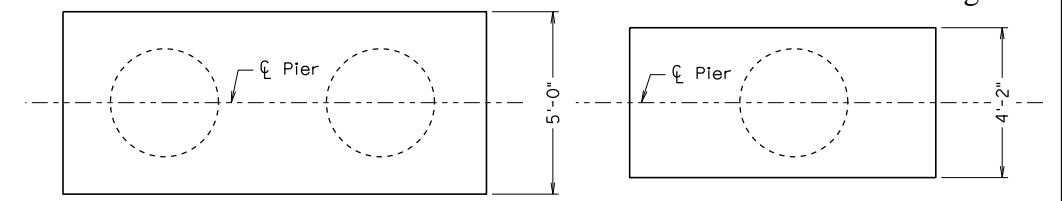
Scale 3/8" = 1'-0"



ABUTMENT A SECTION

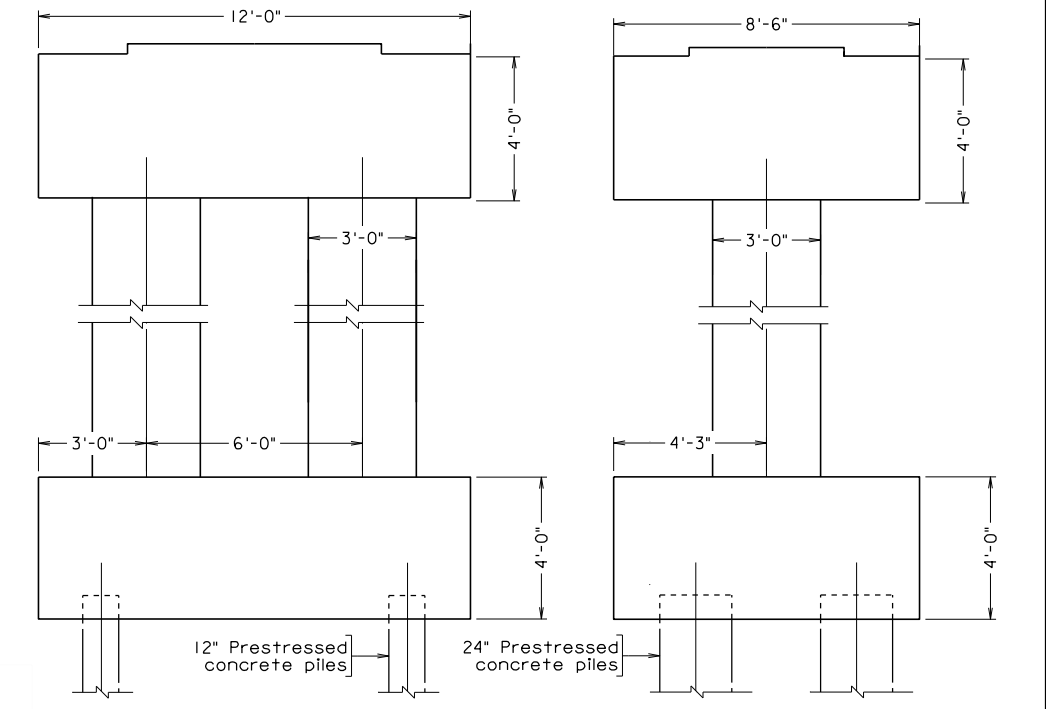
Scale 1/2" = 1'-0"

Scale: 3/8" = 1'-0"



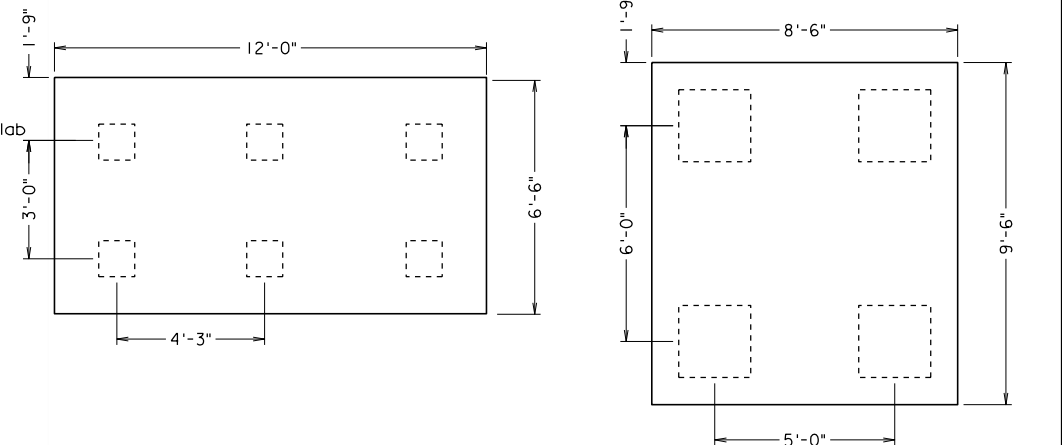
PLAN (PIER 1 & 2)

PLAN (PIER 36)



ELEVATION (PIER 1 & 2)

ELEVATION (PIER 36)



FOOTING PLAN (PIER 1 & 2)

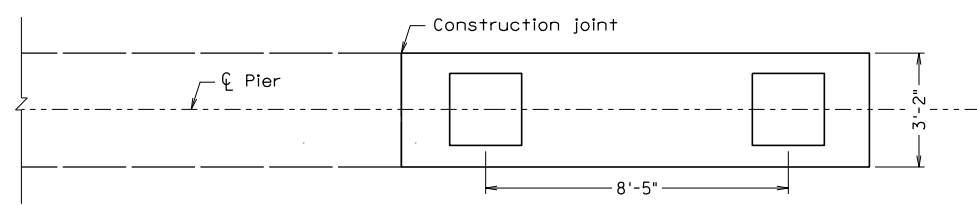
FOOTING PLAN (PIER 36)

Legend:  
 Direction of pile batter

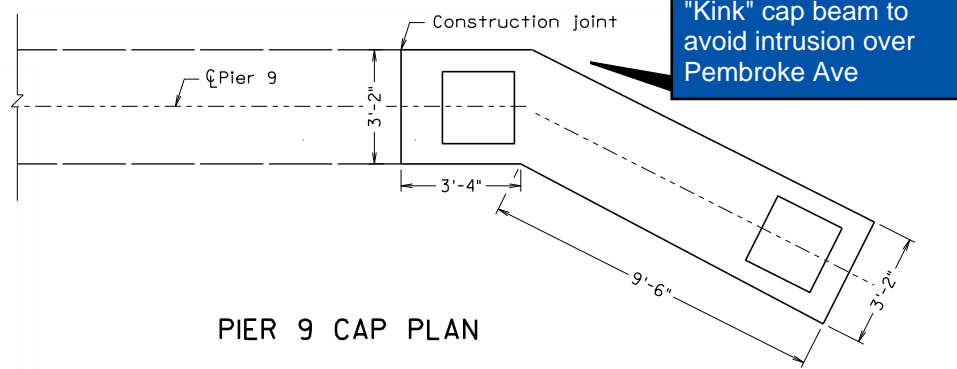
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
BRIDGE B674 I-64 WB SUBSTRUCTURE PLAN AND ELEVATION					
No.	Description	Date	Designed: .....	Date	Plan No.
	Revisions		Drawn: .....	May, 2022	Sheet No.
			Checked: .....		

\$DATE\$ \$TIME\$  
B674_Bent_Details.dgn

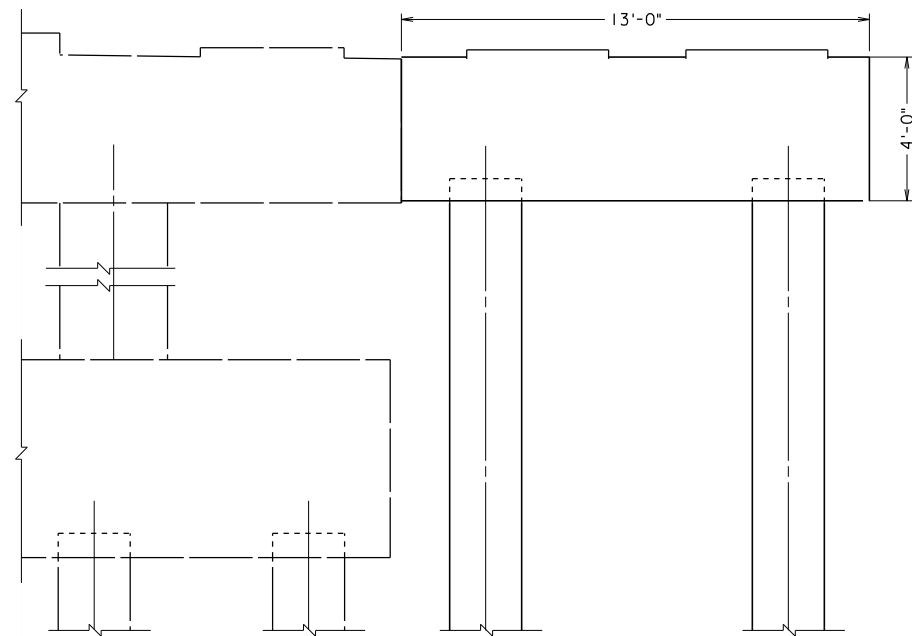
STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-064-3(522)	64	0064-114-374, B674
			NO.



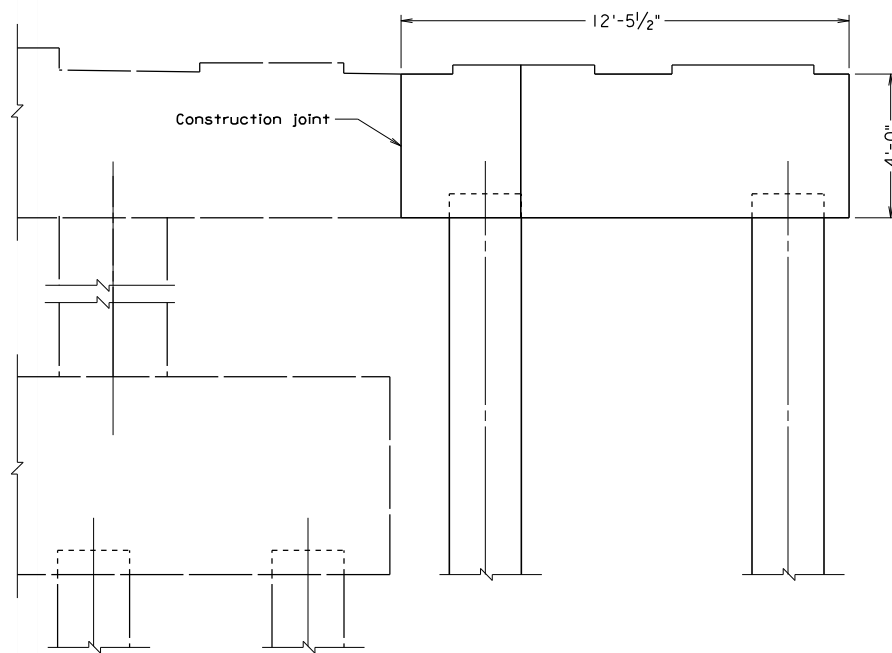
PIER 8 CAP PLAN



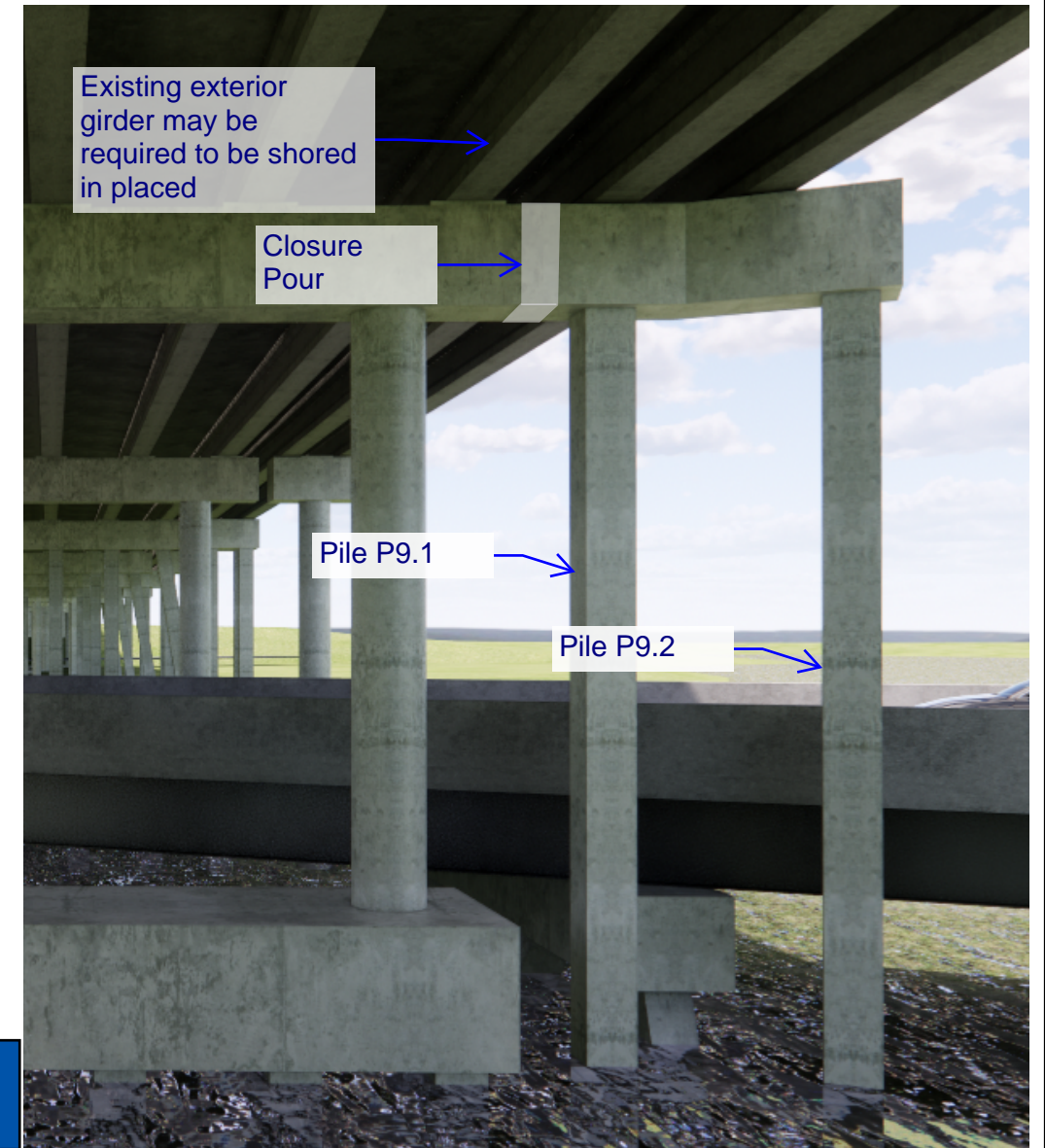
PIER 9 CAP PLAN



PIER 8 ELEVATION



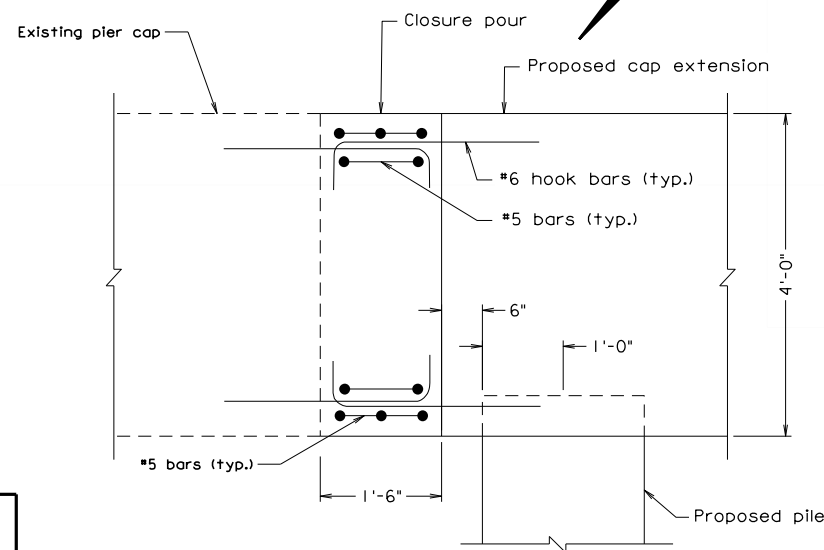
PIER 9 ELEVATION



Revit model for geometric control and 3D visualization

Detail developed for optional closure pour

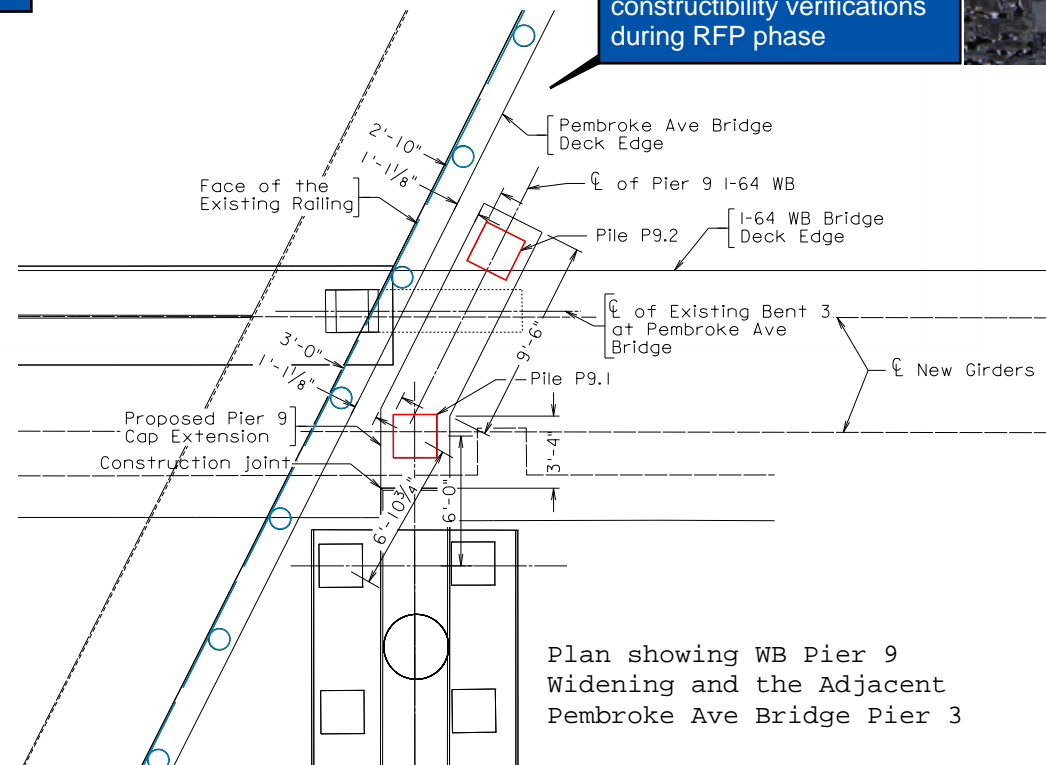
Detail geometric and constructibility verifications during RFP phase



CLOSURE POUR ELEVATION VIEW

(Not to Scale)

• Reinforcement sizes are preliminary



Plan showing WB Pier 9 Widening and the Adjacent Pembroke Ave Bridge Pier 3

Scale: 3/8" = 1'-0"

Sequence of Construction:

1. Install Pile P9.1
2. Install Pile P9.2
3. Construction the new cap beam and bearing pedestals
4. Install the new bearings
5. Erect the new girders
6. Proceed with superstructure widening but allowing for a closure pour in the deck
7. At this stage, the dead load due to the widening is transferred to the new piles
8. Complete the closures at the cap beam and deck
9. Proceed with rest of the construction including the barriers and the sound barrier walls (if applicable)

\$DATE\$ \$TIME\$ B674_Pier Details Combined

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
BRIDGE B674 I-64 WB PIER 8 & 9 PLAN AND ELEVATION					
No.	Description	Date	Designed: .....	Date	Plan No.
			Drawn: .....	March 2022	171-14B
			Checked: .....		
Revisions					





STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-064-3(522)	64	0064-114-374, B676
Federal Structure No.000000000020312		FHWA Construction and Scour Code: X271-SN	
Federal Stewardship and Oversight Code:		UPC No. 119638	

DESIGN EXCEPTION(S): Page 73  
 Maintained existing vertical clearance of 15'-0".  
 Approved by State Structure and Bridge Engineer on December 21, 2020.

**GENERAL NOTES:**

Width: 60'-1" face-to-face of curbs, including widening of 9'-1" +/- on outside of WBL  
 53'-11 1/2" +/- face-to-face of existing curbs on EBL

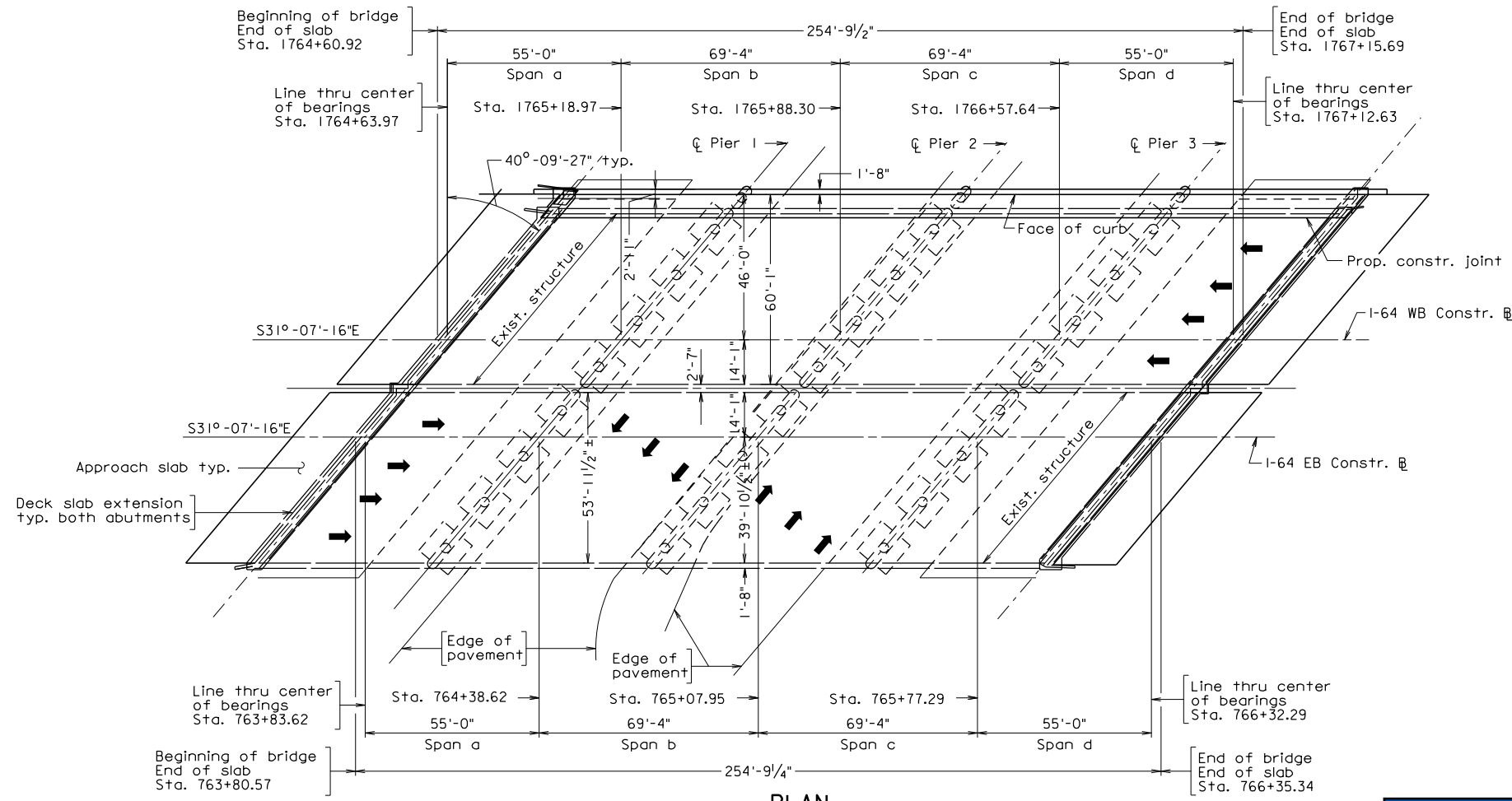
Span layout: 55'-0" - 69'-4" - 69'-4" - 55'-0" WBL  
 55'-0" - 69'-4" - 69'-4" - 55'-0" EBL

Capacity: HL-93 (widening)

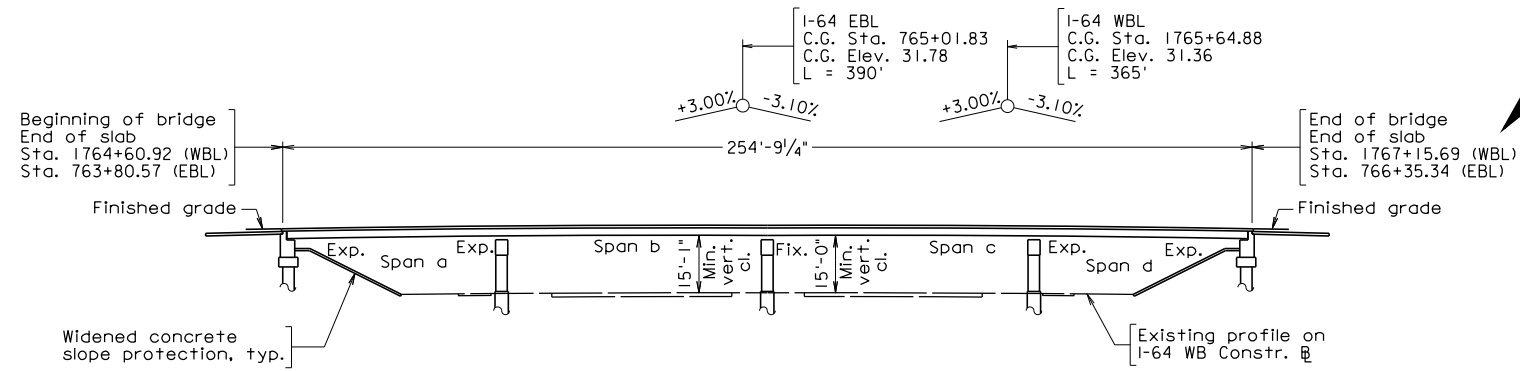
Specifications:  
 Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020  
 Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications.  
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revisions

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

Bridge No. of existing bridges is 2802. Existing Plan No. is 171-15A.

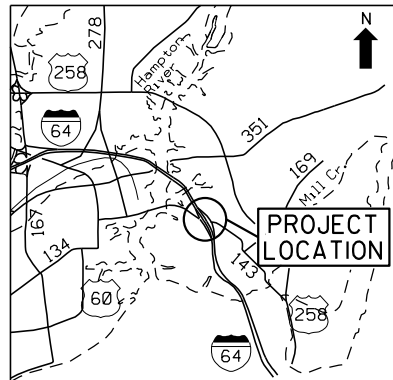


PLAN



ABUTMENT A      PIER 1      PIER 2      PIER 3      ABUTMENT B

DEVELOPED SECTION ALONG WIDENING  
 WBL shown, EBL similar



LOCATION MAP  
 Not to scale

Scale: 1" = 25'

Jointless abutments including deck-over extension with under-drains, and buried approach slabs for better rideability

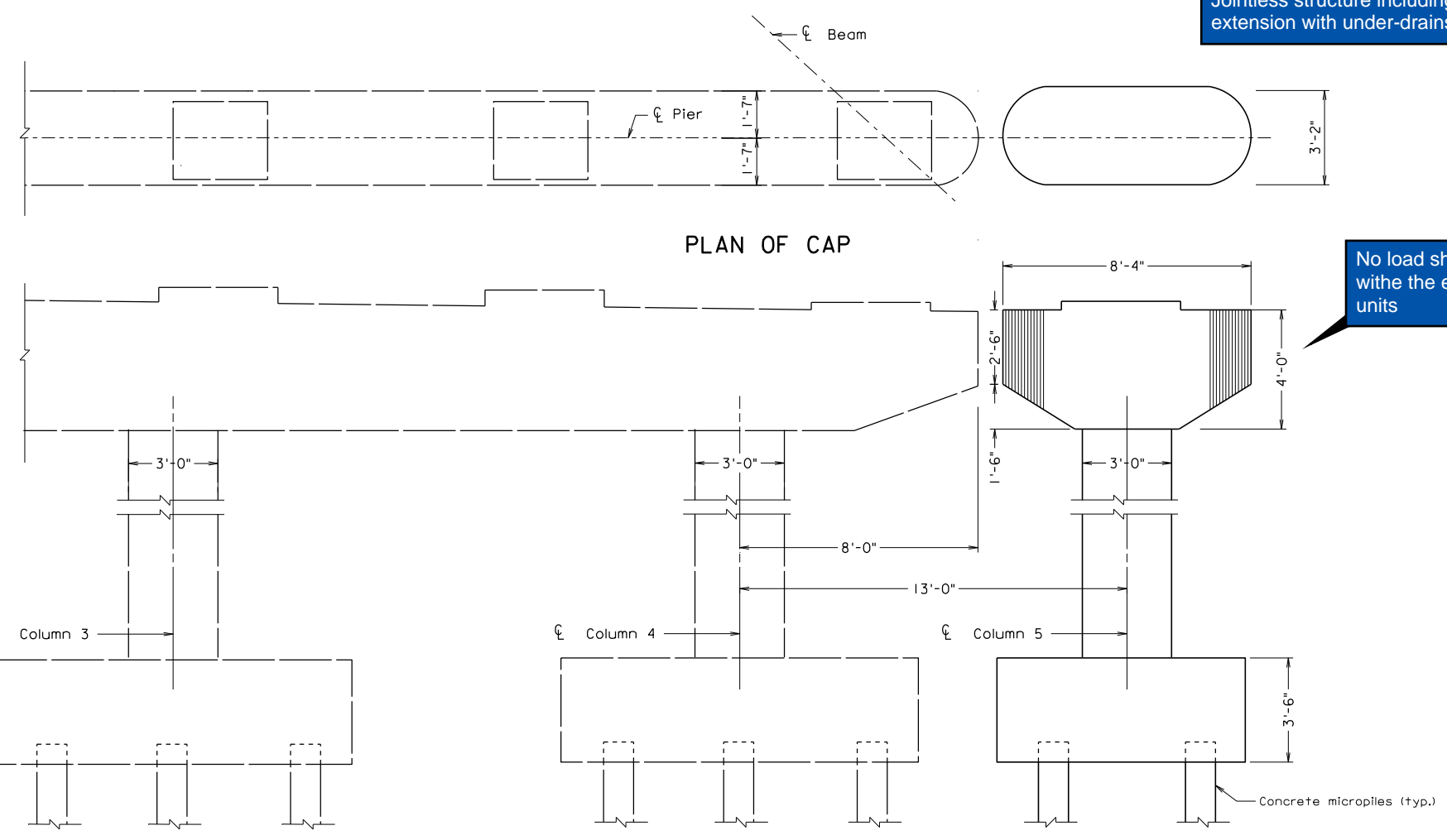
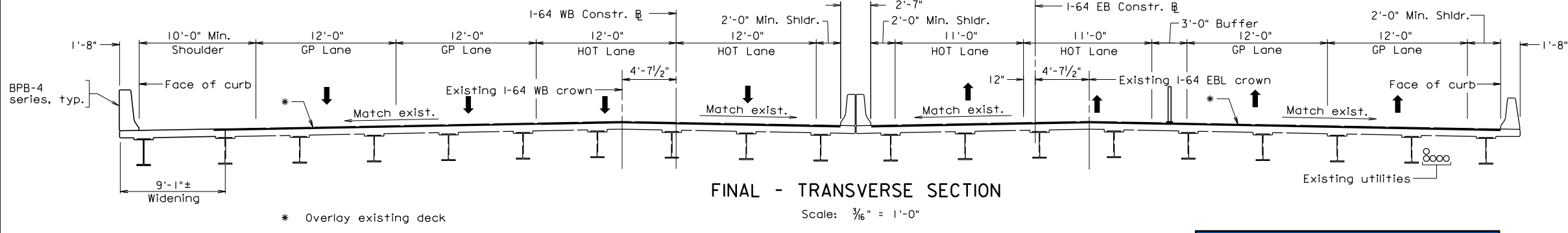
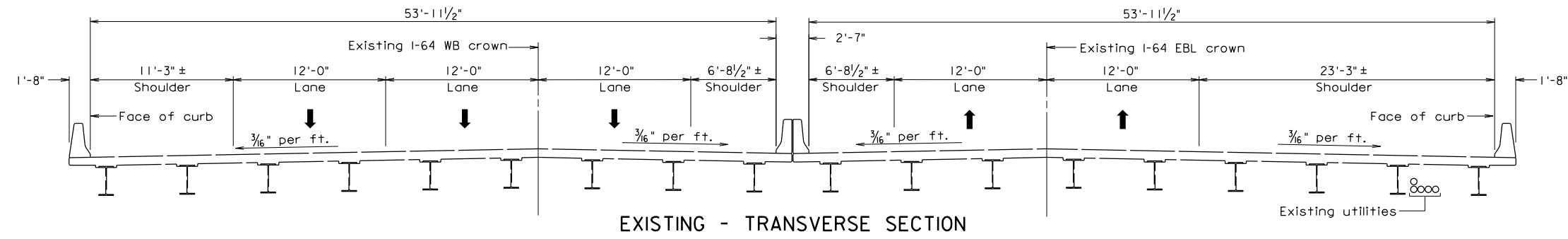
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:

Recommended for Approval: _____ Date _____  
 District Planning and Investment Manager

No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

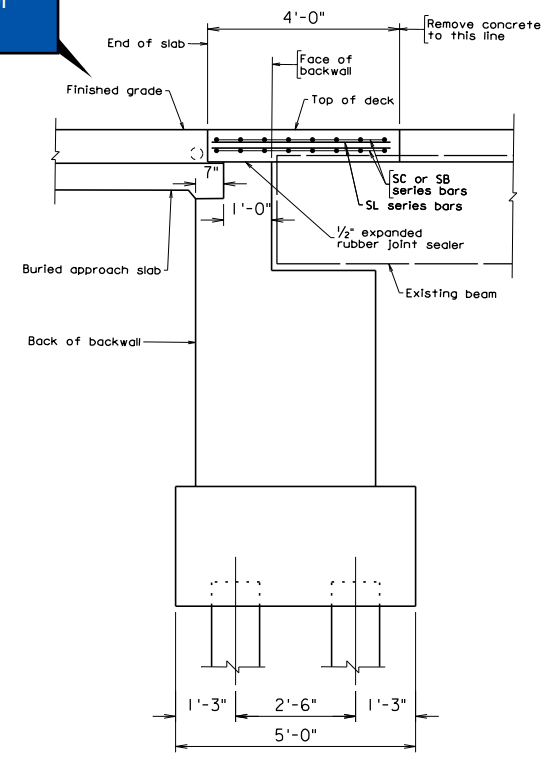
Recommended for Approval: _____ Date _____  
 District Project Development Engineer

Approved: _____ Date _____  
 District Administrator



Jointless structure including deck-over extension with under-drains

No load sharing with the existing units





# 4.5.1

## Sequence of Construction and Maintenance of Traffic Exhibits





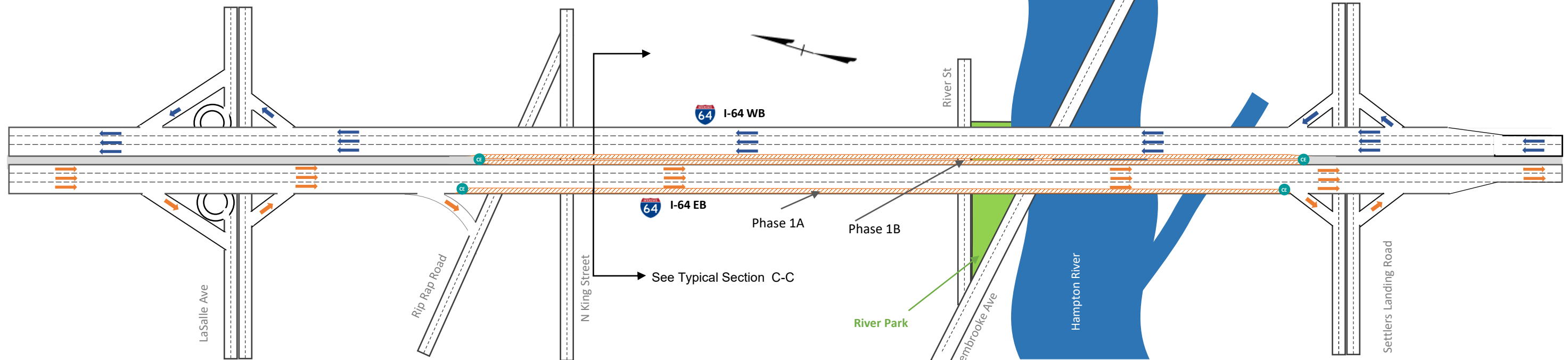
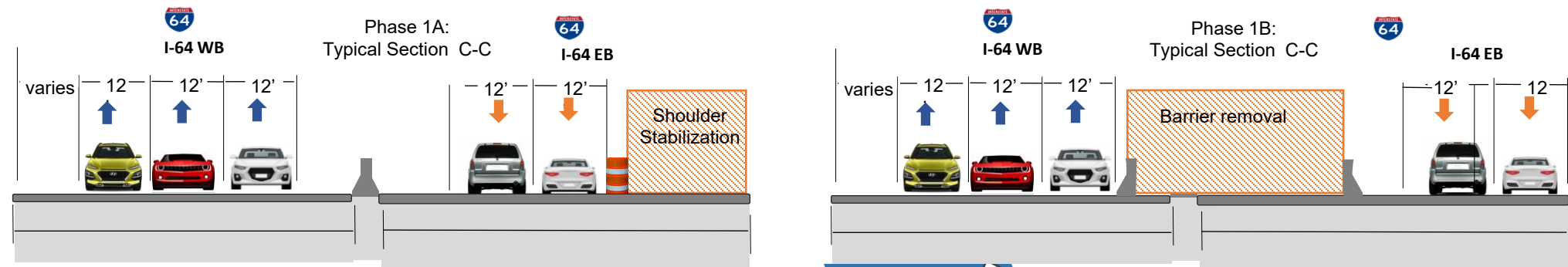
Sequence of Construction (SOC) & Maintenance of Traffic (MOT): I-64 HREL Segment 4C  
 EAST OF LASALLE AVE. TO WEST OF SETTLERS LANDING RD.  
 SEQUENCE OF CONSTRUCTION AND MOT PHASING

# SOC/MOT Phase 1A/B

### Key Construction Activities Phase 1A/1B

- Phase 1A: Shoulder upgrades on I-64 EB
- Phase 1B: Removal of existing permanent concrete barriers between I-64 EB and WB
- Phase 1B: Crossover construction

The DBT has run initial VISSIM analysis of all MOT schemes that shows acceptable Level of Service and Corridor Travel Times. The DBT will run additional microsimulations during final design on all MOT Schemes.



**Legend**

- Active work site (orange hatched)
- Park (green)
- River/ stream (blue)
- Construction Entrance (CE)
- EB Lane/ open (orange arrow)
- WB Lane/ open (blue arrow)
- Barrier (grey trapezoid)
- Closed Area (grey hatched)

- Improves Safety by separating construction areas and traveling public
- Corridor Travel Time Reliability

**MOT Features Phase 1A**

- Shoulder closure and upgrades on I-64 EB
- All Ramps kept open
- No Detours

NOT TO SCALE

SCHEDULE	2022					2023					2024					2025					2026																				
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
Schedule Milestones	NTP																				IM					FC															
Design/ROW/Permits	EWP					ROW Plans					RWP																														
MOT						PHASE 1A/1B					PHASE 1C					PHASE 2A/B					PHASE 3																				
I-64 EB Construction						PHASE 1A/1B										PHASE 2A/B																									
I-64 WB Construction											PHASE 1C																														
I-64 Construction East of Settlers Landing																PHASE 2B																									
I-64 Transition Areas																					PHASE 3																				

NTP: Notice to Proceed | IM: Interim Milestone | FC: Final Completion | EWP: Early Work Package | RWP: ROW Package

DESIGN BUILDER  
 Joint Venture  
**WAGMAN**  
 FAY SOUTHEAST  
 SUB USA CONSTRUCTION

DESIGNED BY  
**exp**

STATE PROJECT  
 0064-114-374, P101, R201, C501  
 Contract ID # C0017841DB11

VIRGINIA DEPARTMENT OF TRANSPORTATION  
**I-64 SEGMENT 4 C**  
**HAMPTON ROADS EXPRESS**  
**LANES DESIGN BUILD PROJECT**

SHEET NO.  
 1 of 5  
 PAGE NO.  
 75





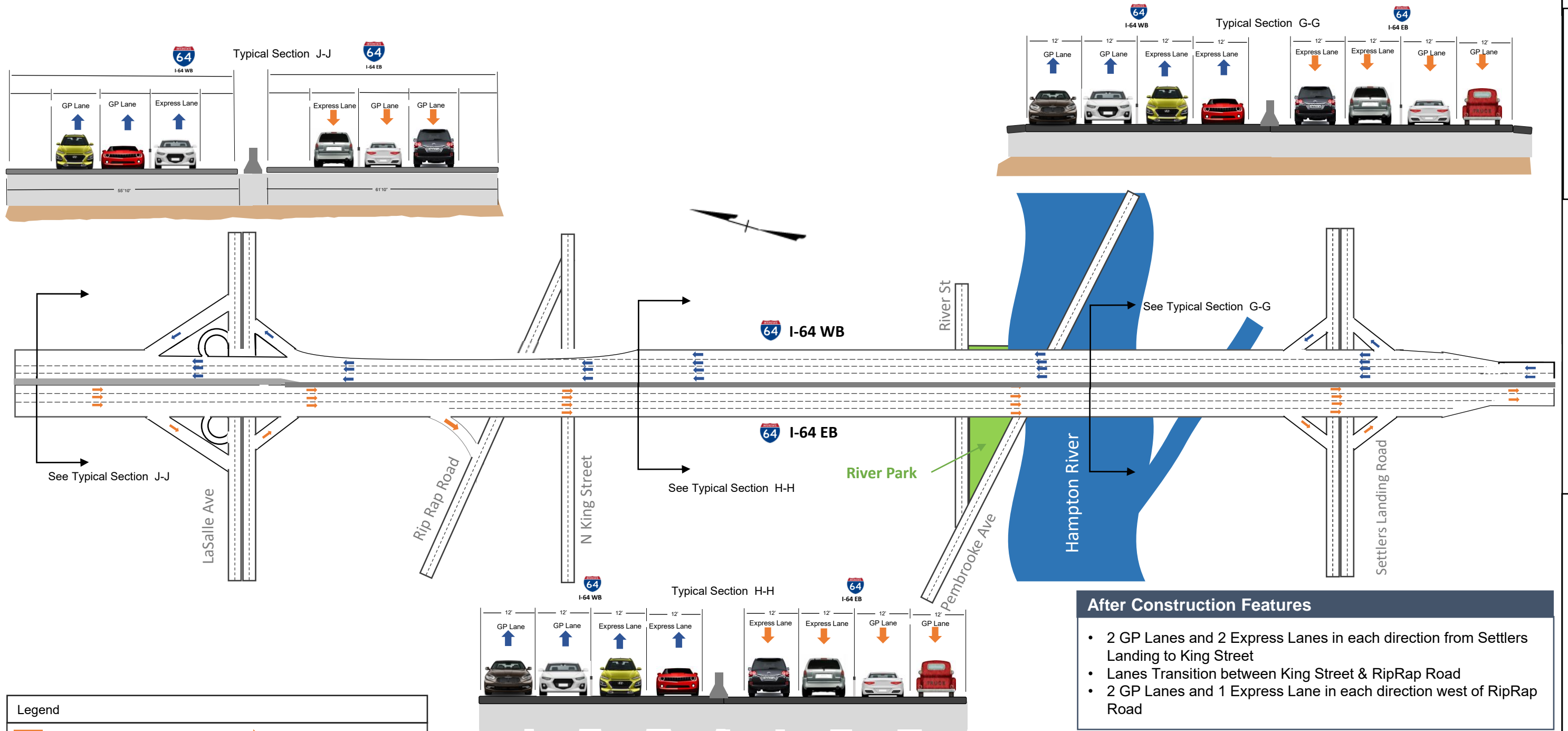






Sequence of Construction (SOC) & Maintenance of Traffic (MOT): I-64 HREL Segment 4C  
 EAST OF LASALLE AVE. TO WEST OF SETTLERS LANDING RD.  
 SEQUENCE OF CONSTRUCTION AND MOT PHASING

# FINAL VIEW



Legend	
	Active work site
	Park
	River/ stream
	Construction Entrance
	EB Lane/ open
	WB Lane/ open
	Barrier
	Closed Area

- After Construction Features**
- 2 GP Lanes and 2 Express Lanes in each direction from Settlers Landing to King Street
  - Lanes Transition between King Street & RipRap Road
  - 2 GP Lanes and 1 Express Lane in each direction west of RipRap Road

NOT TO SCALE

DESIGN BUILDER  
 Joint Venture  
**WAGMAN**  
 Management Services Inc. | Consultant  
**FAY SOUTHEAST**  
 SUB USA CONSTRUCTION

DESIGNED BY  
**exp.**

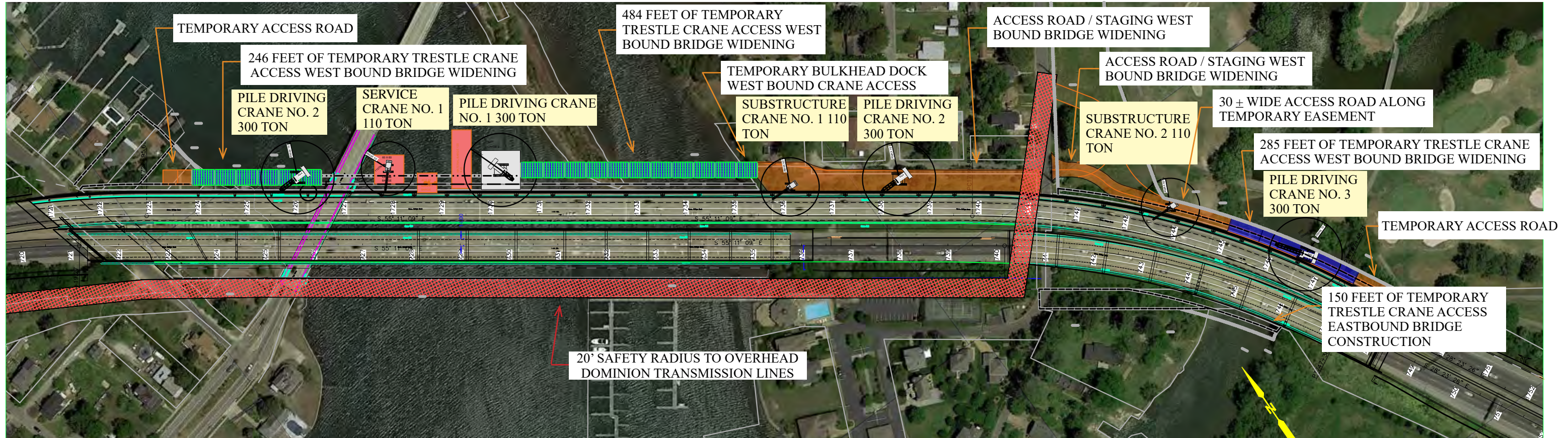
STATE PROJECT  
 0064-114-374, P101, R201, C501  
 Contract ID # C00117841DB11

VIRGINIA DEPARTMENT OF TRANSPORTATION  
**I-64 SEGMENT 4 C**  
**HAMPTON ROADS EXPRESS**  
**LANES DESIGN BUILD PROJECT**

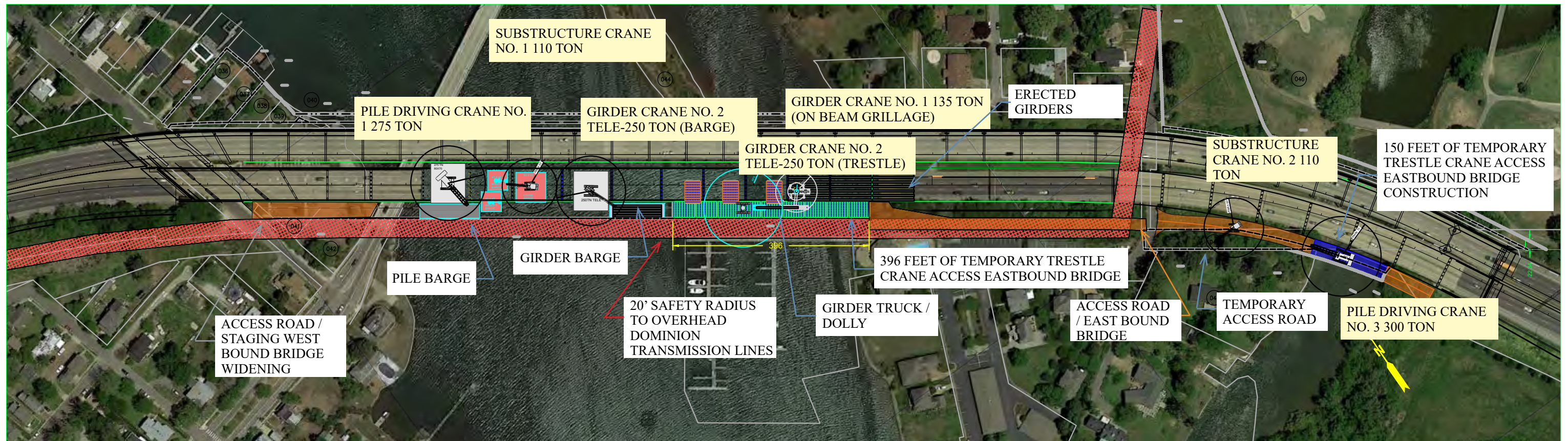
SHEET NO.  
 5 of 5  
 PAGE NO.  
 79



B-673 and B-674 Construction Phasing and Access



Construction Access Plan for I-64 WB over Hampton River Westbound Widening



Construction Access Plan for I-64 EB over Hampton River Eastbound Reconstruction



