

Submitted to:



# Technical Proposal VOLUME I

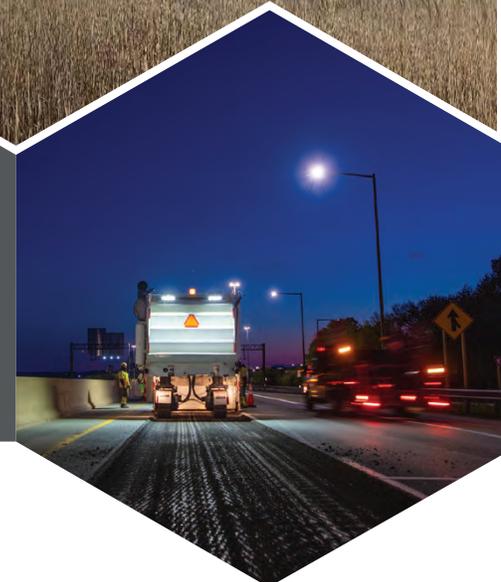
A DESIGN-BUILD PROJECT

August 17, 2022

I-64 HAMPTON ROADS  
EXPRESS LANES (HREL)  
SEGMENT 1A

FROM: 0.150 MI E OF PATROL RD  
TO: 0.673 MI E OF TIDEWATER DR

**CITY OF NORFOLK, VIRGINIA**



**State Project No.:** 0064-122-470

**Federal Project No.:** NHPP-064-3(520)

**Contract ID Number:** C00117840DB112

Submitted by:



# 4.1 LETTER OF SUBMITTAL





August 17, 2022

Bryan W. Stevenson, PE, DBIA  
Alternative Project Delivery Division  
Virginia Department of Transportation  
1401 East Broad Street  
Richmond, VA 23219

Letter of Submittal/Technical Proposal:  
**I-64 Hampton Roads Express Lanes (HREL) Segment 1A**  
City of Norfolk, Virginia  
Contract ID Number: C00117840DB112

Dear Mr. Stevenson:

Allan Myers (Myers), Whitman Requardt & Associates (WRA), Quinn Consulting Services (QCS), Aldridge Electric (AE), and Bowman Consulting (BOW) herein referred to as the Myers Team, respectfully submit our Technical Proposal for the I-64 HREL Segment 1A Project (Project). Our intimate experience in the Project region dovetails with our ATC Solution #1 to open the new managed lanes early, protect motorists and maximize traffic flow, and efficiently deliver the Project with cost and schedule certainty.

✓ This checkmark appears throughout our proposal to highlight areas of added value to VDOT.

As requested by RFP Section 4.1, the Myers Team presents the following information:

- 4.1.1 Allan Myers VA, Inc., is the legal entity that will execute a contract with VDOT.
- 4.1.2 Allan Myers VA, Inc., intends to enter into a contract with VDOT for the Project in accordance with the terms of the RFP.
- 4.1.3 The offer represented by the Technical and Price Proposals will remain in full force and effect for 120 days after the Price Proposal is submitted to VDOT on September 15, 2022.
- 4.1.4 Entrusted Engineer in Charge Thomas Heil will serve as the Point of Contact for the Myers Team.  

<b>Thomas Heil, PE, DBIA</b>	(571) 485-0387 (Telephone)
12500 Fair Lakes Circle, Suite 150	(703) 272-7230 (Fax)
Fairfax, VA 22033	tom.heil@allanmyers.com
- 4.1.5 Executive Vice President of Operations Aaron Myers is the Principal Officer for the Myers Team.  

<b>Aaron Myers</b>	(804) 290-8500 (Telephone)
301 Concourse Boulevard, Suite 300	(804) 418-7935 (Fax)
Glen Allen, VA 23059	aaron.myers@allanmyers.com
- 4.1.6 The Myers Team proposes a Final Completion date of December 15, 2025.
- 4.1.7 The Myers Team does not propose any unique milestone dates for the Project.
- 4.1.8 The Myers Team includes the executed Proposal Payment Agreement in *Appendix 9.3.1*.
- 4.1.9 The Myers Team includes all executed Certification Regarding Debarment Forms in *Appendix 4.1.9*.
- 4.1.10 The Myers Team will achieve the 12% DBE participation goal for the entire contract value.
- 4.1.11 All Myers Team members meet the commercial/professional registration requirements specified, remain in good standing with all applicable regulatory bodies, and are eligible to provide the services required for the Project.

Respectfully,

\_\_\_\_\_  
Aaron T. Myers  
Executive VP of Operations, Allan Myers

# 4.2 OFFEROR'S QUALIFICATIONS



### 4.2.1 OFFEROR'S QUALIFICATIONS

#### CONFIRMATION OF SOQ INFORMATION

The Myers Team confirms the information contained in our SOQ remains true and accurate. We commit to maintaining the Team provided in the SOQ, with the changes to our SOQ submission that VDOT approved on August 4, 2022.

#### DEPUTY AND ADDITIONAL KEY PERSONNEL

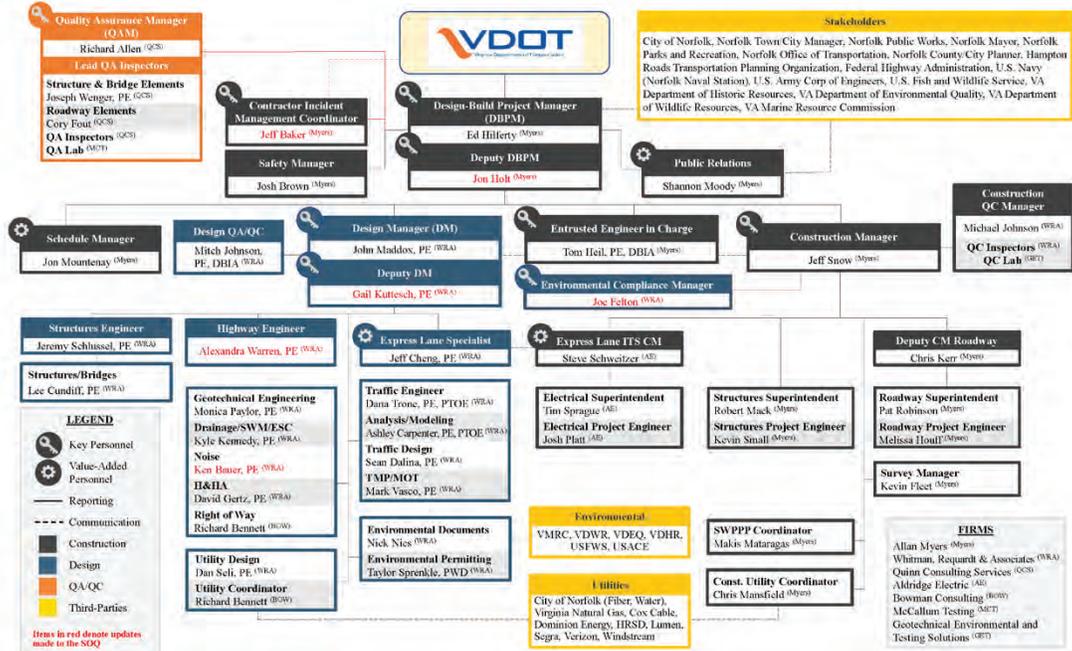
To further support Project delivery and grow the next generation of Virginia's design-build leaders, the Myers Team provides additional personnel with relevant highway, complex Maintenance of Traffic (MOT), and regional experience. We have supplemented our SOQ Team with two Deputy Key Personnel and have designated an Environmental Compliance Manager (ECM) and Contractor Incident Management Coordinator (CIMC) to oversee environmental compliance efforts and maximize public safety.

#### UPDATES TO THE ORGANIZATIONAL STRUCTURE

Our Team's organizational structure includes all aspects of management, design, and construction resources to support cost-effective and schedule-conscious Project delivery and implement innovative design/construction approaches. The narrative below describes the roles and relationships of new deputy personnel in managing the Project and mitigating risks to ensure successful delivery. *Figure 2.1* reflects the VDOT-approved Org Chart.

-  **Deputy Design-Build Project Manager** Jon Holt will report to DBPM Ed Hilferty and support the Team as we transition the Project from the RFP into design-build delivery. His expertise and leadership—drawn especially from his project experience and stakeholder relationships in the Hampton Roads region—will help our Team integrate design, acquire necessary permits, and further develop a successful execution strategy.
-  **Deputy Design Manager (DDM)** Gail Kuttesch, PE, will report to DM John Maddox and assist his management of a multidisciplinary Team developing complex design elements and detailed design submissions. Gail will assist with coordinating the individual design disciplines and ensure the overall Project design is in conformance with contract documents and the Project's Design QA/QC program.
-  **Environmental Compliance Manager (ECM)** Joe Felton will report to CM Jeff Snow and ensure our Team manages environmental compliance through design and construction. He will oversee conformance of all Project activities to the applicable environmental regulatory permit conditions and ensure the Team meets all environmental commitments identified in the NEPA document.
-  **Contractor Incident Management Coordinator (CIMC)** Jeff Baker will report to DBPM Ed Hilferty and lead our proactive approach to incident management. He will respond immediately to all incidents within the Project limits by applying NIMS principles and practices.

Figure 2.1: Revised Org Chart (Approved by VDOT August 4, 2022)



# 4.3 DESIGN CONCEPT



## APPROACH TO DESIGN DEVELOPMENT

Our Team's approach to designing the Project is to exceed the RFP requirements while balancing cost and schedule implications. Through our review of the RFP, site visits, meetings with VDOT, coordination with utility companies, and knowledge of the Project corridor, we have developed the design optimizations listed in *Figure 3.1.1* that support VDOT's Project priorities for cost and design efficiency while minimizing construction impacts to the traveling public and limiting potential risks for all stakeholders.

In preparing this proposal (including the *Volume II Conceptual Design Plans (Volume II Plans)*), **John Maddox, PE**, (DM) and **Gail Kuttesch, PE**, (DDM) focused the Project design Team on practical solutions for maintaining current traffic patterns (minimizing impacts to I-64 and I-564 users and the community); meeting or exceeding the RFP requirements and the Project's intended scope of work; benefiting end users; reducing the need for future inspection and maintenance; and minimizing impacts to surrounding properties, resources, and environmental features. Our Team will coordinate with the U.S. Navy to avoid impacts to their property and maintain the security provided by fencing, landscaping, and CCTV cameras.

We understand that maintaining traffic during construction is the biggest challenge of this Project. Our Team's design is highly integrated with construction to reduce impacts to traffic during construction:

- ✓ • ATC #1 prioritizes construction of the managed lanes and opens them early in the schedule
- ✓ • This approach allows the WB lanes to be constructed in a compressed, two-phase schedule, without road plates, resulting in fewer impacts to the traveling public

Our Team's design:

- Meets or exceeds all requirements established in the Design Criteria Table (RFP Part 2, *Attachment 2.2*)
- Stays within the proposed right-of-way (RW) limits shown in the RFP Conceptual Plans
- Does not include any additional design exceptions or design waivers not included in the RFP

### 4.3.1 CONCEPTUAL ROADWAY PLANS

The Project will add a high-occupancy, express-managed, part-time shoulder lane in both directions along I-64 for a total of approximately 2.1 miles. Our Team is well prepared to achieve the Project's priorities including:

- **Cost** – Our Team's design and construction focuses on lowering costs while maintaining quality and meeting the Project schedule.
- **Design Concept** – We have optimized our design to provide a product that will increase safety and reduce long-term maintenance, especially in our drainage layouts and retaining wall designs.
- **Construction of the Project** – Our sequence of construction and MOT has been significantly reworked to decrease impacts to the public and provide a safer work zone by eliminating the use of steel plates throughout the Project.
- **Project Approach** – Our Team has a proven approach to risk management to prevent cost and schedule impacts associated with environmental management, utility relocations/coordination, geotechnical conditions, and quality management for all Project stakeholders.

Our Team's Concept includes two Alternative Technical Concepts (ATC), which have been conditionally approved by VDOT:

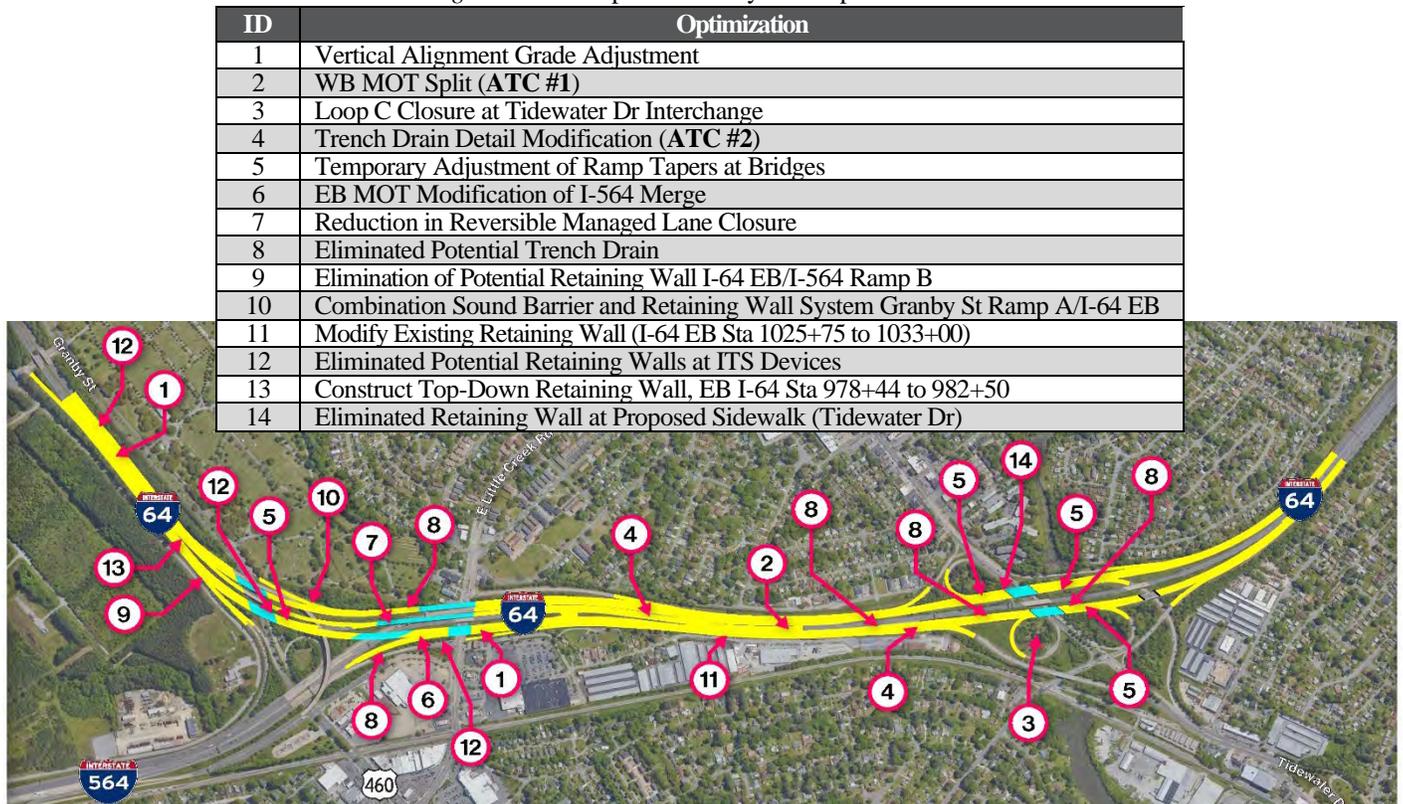
- **ATC #1** – Temporary Utilization of WB managed lane as I-64 WB General Purpose Lane
- **ATC #2** – Trench Drain Detail Modifications

✓ Based on our integrated design and construction teaming approach and experience on similar VDOT projects, we developed the *design feature optimizations listed in Figure 3.1.1 and mapped in Figure 3.1.2.*

 Figure 3.1.1: Roadway Plan Optimizations

ID	Optimization	Value Added
1	Vertical Alignment Grade Adjustment	<ul style="list-style-type: none"> <li>Utilizes spline grade throughout Project to minimize pavement buildup in existing sag vertical curves.</li> <li>Reduces impacts to traffic during construction and expedites construction.</li> <li>Minimizes construction impacts to existing barriers, slopes, and environmental features.</li> <li>Eliminates modification of existing drainage structures and improves temporary drainage.</li> </ul>
2	WB MOT Split (ATC #1)	<ul style="list-style-type: none"> <li>Utilizes WB managed lane to achieve RFP requirement to maintain two general purpose lanes.</li> <li>Allows single lane of WB traffic on WB bridges over Granby St and Little Creek Rd during repairs.</li> <li>Provides safer work zone with access to complete joint work on the bridges without using steel plates.</li> <li>Maintains a barrier-separated reversible managed lane.</li> <li>Reduces construction duration for these bridges and road improvements by approximately three months.</li> <li>Improves quality of construction by reducing construction joints.</li> </ul>
3	Loop C Closure at Tidewater Dr Interchange	<ul style="list-style-type: none"> <li>Reduces the number of lanes to be maintained across the EB Tidewater Dr bridge.</li> <li>Provides a safer work zone by eliminating the eastbound I-64 weave.</li> <li>Eliminates use of steel plates for bridge construction to provide a safer work zone.</li> <li>Reduces construction duration of the I-64 EB over Tidewater Dr bridge by approximately three months.</li> <li>Improves quality of construction by reducing construction joints.</li> <li>Our Team prepared a traffic analysis in accordance with the TOSAM to determine acceptable impacts.</li> </ul>
4	Trench Drain Detail Modification (ATC #2)	<ul style="list-style-type: none"> <li>Modifies trench drain detail to be constructable while maintaining existing concrete median barrier.</li> <li>Improves constructability by eliminating deep pipe trenches in narrow work areas.</li> <li>Reduces construction duration by maintaining existing median barrier.</li> <li>Reduces the number of outfalls by increasing trench drain lengths.</li> <li>Reduces long-term maintenance by eliminating three drop inlets and 550 ft of storm sewer pipe.</li> </ul>
5	Temporary Adjustment of Ramp Tapers at Bridges	<ul style="list-style-type: none"> <li>Temporarily reconfigures ramps to reduce the number of lanes on the bridges at I-64 EB over Granby Rd ramp to managed lanes (Phases 1 and 2); Tidewater Dr Loop B (Phases 1 and 2); Tidewater Dr Loop A (Phases 1 and 2); and Tidewater Dr Ramp E (Phases 1 and 2).</li> <li>Improves safety and reduces construction duration by eliminating use of steel plates.</li> </ul>
6	EB MOT Modification of I-564 Merge	<ul style="list-style-type: none"> <li>Shifts merge point during construction to provide space for bridge rehabilitation of I-64 EB over I-564.</li> <li>Eliminates need for steel plates and reduces the construction duration by approximately one month.</li> </ul>
7	Reduction in Reversible Managed Lane Closure	<ul style="list-style-type: none"> <li>Completes the reversible managed lane closure within the 21-day allowable closure period.</li> <li>Constructs majority of BMB-3 in phases with reversible lane separated by temporary concrete barrier.</li> </ul>
8	Eliminated Potential Trench Drain	<ul style="list-style-type: none"> <li>Minimizes or eliminates potential trench drain through drainage design efficiency, revised shoulder width, and removal of curb under guardrail.</li> <li>Reduces long term maintenance requirements, improves constructability, and reduces construction cost.</li> <li>Removes approximately 2,100 LF of trench drain compared to the RFP plan.</li> <li>Eliminates trench drain at I-64 WB Construction BL, 2845+15 LT to 2846+75 LT; I-564 Ramp D Construction BL, 35+72 RT to 39+78 RT; I-64 EB Construction BL, 1036+00 LT to 1043+00 LT; I-64 EB Construction BL, 1047+00 LT to 1054+34 LT; I-64 EB Construction BL, 1057+50 LT to 1058+89 LT</li> </ul>
9	Elimination of Potential Retaining Wall I-64 EB/I-564 Ramp B	<ul style="list-style-type: none"> <li>Eliminates approximately 559 LF of retaining wall by constructing MB-7F barrier and grade 2:1 on I-64 EB Sta 980+65 to Sta 981+27; I-564 Ramp B Sta 14+53 to Sta 19+50.</li> <li>Decreases construction time, cost, and eliminates future VDOT maintenance.</li> </ul>
10	Combination Sound Barrier and Retaining Wall System Granby St Ramp A/I-64 EB	<ul style="list-style-type: none"> <li>Eliminates approximately 1,269 LF of special design wall system by integrating retaining wall panels within the sound barrier system for Granby Ramp A 202+75 to 210+59 and I-64 WB 2842+60 to 2847+45.</li> <li>Decreases construction time and reduces future VDOT maintenance.</li> </ul>
11	Modify Existing Retaining Wall (I-64 EB Sta 1025+75 to 1033+00)	<ul style="list-style-type: none"> <li>Eliminates the need to remove an existing retaining wall and construct a new retaining wall over 725 LF by partially removing existing retaining wall and constructing a new parapet on the existing retaining wall. Additional reinforcement steel will be drilled and grouted into the existing retaining wall to supplement the existing reinforcement steel as needed to connect the new parapet.</li> <li>Decreases construction time and cost.</li> </ul>
12	Eliminated Potential Retaining Walls at ITS Devices	<ul style="list-style-type: none"> <li>Extends 2:1 fill slopes and incorporates drainage pipes under fill slopes (where needed to maintain drainage ditches) to eliminate retaining walls at ITS devices at I-564 Ramp D Sta 40+00; I-64 EB Sta 983+50, Sta 991+00, and Sta 999+00; and I-64 WB Sta 2814+00 and Sta 2859+50.</li> <li>Decreases construction time, cost, and reduces future VDOT maintenance.</li> </ul>
13	Construct Top-Down Retaining Wall, EB I-64 Sta 978+44 to 982+50	<ul style="list-style-type: none"> <li>Incorporates sheet pile or soldier pile lagging wall with concrete cap/facing to encapsulate all exposed portions of steel elements, eliminating conventional type (MSE/Gravity) retaining wall system along I-64 WB (median).</li> <li>Reduce impacts to traffic along I-64 WB and decreases construction cost and time.</li> </ul>
14	Eliminated Retaining Wall at Proposed Sidewalk (Tidewater Dr)	<ul style="list-style-type: none"> <li>Extends the length of the new wing wall at I-64 WB bridge over Tidewater Dr, which allows the contours to be adjusted and eliminates the potential retaining wall along the sidewalk at Tidewater Dr.</li> <li>Decreases construction time, cost, and future VDOT maintenance.</li> </ul>

Figure 3.1.2: Map of Roadway Plan Optimizations



**(A-D) GENERAL GEOMETRY**

As the RFP notes, I-64 is functionally classified as an Urban Interstate (GS-INT) with rolling terrain and a minimum design speed of 60 mph. Our *Volume II Plans* detail horizontal curve data, design speeds, and the number and widths of lanes and shoulders. They also include typical sections for ramps, retaining walls, bridge structures, and pavement sections. Superelevation rates will match existing pavement cross slopes, as allowed in Design Exception (DE) No. 04: Superelevation. Our Team has not changed any horizontal alignments from the RFP Conceptual Plans.

**Vertical Alignments**

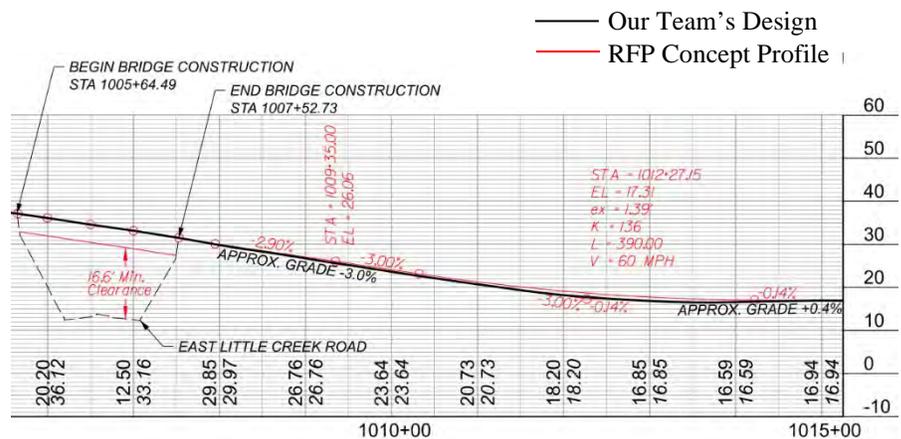
We have optimized the vertical alignments throughout the Project to match the existing pavement grades and confirm that all grades meet the maximum and minimum shown in the RFP Design Criteria, except where listed in Part 2, Section 2.2, Mainline and Other Roadway Improvements (*Figure 3.1.3*).

Figure 3.1.3: Maximum Grade—Design vs. RFP

Location	Maximum Grade		
	Proposed	RFP Concept Plans	RFP Allows
<b>I-64 EB</b>	3.4%	3.6%	4.0%
<b>I-64 WB</b>	3.2%	3.2%	4.0%
<b>Managed Lanes</b>	4.6%	4.6%	4.0%
<b>Crossover</b>	0.4%	0.3%	N/A
<b>Little Creek Ramp A</b>	0.2%	0.2%	7.0%
<b>Little Creek Ramp B</b>	0.7%	0.9%	7.0%
<b>I-564 Ramp B</b>	3.8%	3.9%	7.0%
<b>I-564 Ramp C</b>	2.8%	3.5%	7.0%
<b>I-564 Ramp D</b>	2.1%	2.3%	7.0%
<b>I-564 Ramp G</b>	2.3%	2.3%	7.0%
<b>Tidewater Ramp A</b>	0.9%	0.9%	7.0%
<b>Tidewater Ramp B</b>	1.0%	1.1%	7.0%
<b>Tidewater Ramp C</b>	4.5%	4.6%	7.0%
<b>Tidewater Ramp D</b>	0.6%	0.6%	7.0%
<b>Tidewater Ramp E</b>	2.5%	2.5%	7.0%
<b>Tidewater Loop A</b>	5.0%	5.0%	7.0%
<b>Tidewater Loop B</b>	5.7%	5.7%	7.0%
<b>Tidewater Loop C</b>	4.0%	4.0%	7.0%
<b>Granby Ramp A</b>	5.0%	5.0%	7.0%
<b>Patrol Ramp A</b>	6.0%	5.9%	7.0%

By utilizing the existing grades, our Team improves drainage during construction, minimizes impacts to traffic during construction, and establishes a safer work zone. The most significant changes occur in the sag vertical curves (shown in *Figure 3.1.4*) and along the ramps. In this figure, our Team's design (black) is positioned on top of the RFP Concept profile (red). Additionally, these changes to the vertical alignment reduce the limits of disturbance and impacts to environmental features. The *Volume II Plans* further detail our Team's vertical alignments.

Figure 3.1.4: Eastbound Sag Curve



Ramp and gore designs meet all design criteria throughout the Project. Per Addendum #3, a DE is not required if a sag curve meets the comfort criteria and lighting is provided. This affects five sag curves in the I-64 EB direction, one curve within the I-64 reversible managed lanes, and six curves within the I-64 WB direction.

### (E) CONCEPTUAL HYDRAULIC AND STORMWATER MANAGEMENT (SWM) DESIGN

Our Team's drainage design concept reduces cost, meets or exceeds VDOT design standards, coordinates temporary drainage phasing with the SOC, improves constructability, and reduces long-term maintenance needs. We have reviewed and optimized the RFP drainage design by eliminating SWM BMP locations, reducing trench drains, reducing MC-3B asphalt curb, and minimizing the number of drop inlets and pipe length required. In accordance with RFP technical requirements, all pipe crossings of mainline I-64 travel lanes or ramps are designated for trenchless installation.

- ✔ *Our design reduces the number of crossings by using trunk lines and combining crossings. Likewise, our Team has identified existing pipe crossings for inspection and rehabilitation with potential future savings for VDOT if the existing pipe is in adequate condition. Our approved trench drain detail modification ATC #2 improves constructability and reduces cost while maintaining sufficient drainage capacity to meet spread requirements.*

#### Reducing Asphalt Curb Under Guardrail

- ✔ *In developing our drainage design, we identified locations to eliminate asphalt curb under guardrail, decreasing construction cost, and improving safety while reducing long-term maintenance.* We identified the following locations to remove MC-3B: I-64 EB 966+45 Rt to 981+16 Rt; I-64 EB 1045+50 Lt to 1054+29 Lt; I-64 EB 1057+71 Lt to 1063+03 Lt; I-64 WB 2814+43 Lt to 2824+00 Lt; I-64 WB 3041+69 Rt to 3045+32 Rt; and I-64 WB 3048+30 Rt to 3050+52 Rt. In these locations, the guardrail is adjacent to slopes that are less than 5 ft high and at reduced risk of erosion. Without the curb, locations with narrow shoulder are at greatly reduced risk of spread encroaching on the roadway, improving safety for the traveling public. Eliminating the curb also reduces long-term maintenance by eliminating storm inlets in these areas.

#### Stormwater Management Design

We have reviewed and verified that the RFP SWM design approach meets the *VSMP Part IIB* criteria.

- ✔ *Our Team's SWM analysis has calculated a phosphorus reduction requirement that is less than the RFP design and can potentially reduce the number of nutrient credits needed by as much as 1.5 lbs/yr in the final design (13.0 lbs/yr vs 14.46 lbs/yr).*
- ✔ *In addition, our SWM plan utilizes high efficiency BMPs to optimize the plans for improved water quality performance and allow fewer overall BMPs, reducing the number of surface BMPs from 7 to 4.*

#### Trench Drain Detail ATC #2

Our Team's approved trench drain detail ATC #2 allows trench drain to be constructed in lengths up to 400 ft. The approved detail eliminates the pipe beneath the trench drain in these areas. By reducing the length of storm sewer pipe and excavation trench, the ATC lessens the need for excavation support during construction by

reducing the excavation depth. Additionally, the ATC decreases the length of pipe installed under the trench drain. This unique design approach eliminates three drop inlet structures and approx. 550 ft of pipe under trench drain.

✓ *The change will improve constructability, reduce long-term maintenance, and lower construction costs.*

#### (F) PROPOSED RIGHT OF WAY (RW) LIMITS

Based on the RFP plans, new RW is required from two Commonwealth of Virginia properties being used by VDOT as maintenance and operation facilities. As such, they are VDOT Capital Outlay properties, not traditional highway RW. Our Team will coordinate with the VDOT Capital Outlay and Facilities Management Division and arrange an internal transfer of the needed RW for the Project. Bowman's staff have encountered and accomplished similar RW needs on Transform I-66 Outside Beltway, I-95 at Route 3, and numerous other VDOT projects. At an early kickoff meeting with capital outlay staff, we will review requirements and ensure the transfer does not impact construction.

#### (G) PROPOSED UTILITY IMPACTS

Utility impacts are minimal for the mainline work as the proposed improvements and widening lie primarily within existing RW. However, considerable existing utility infrastructure does exist along the cross streets at Granby St, Little Creek Rd, and Tidewater Dr. Due to congestion in these corridors, the proposed widening, and current structural requirements and standards, they demand extra attention during final design and construction. To reduce or eliminate conflicts within the congested cross street corridors, our Team has designed narrower bridge footings where necessary to maintain adequate clearances to existing utilities and has designed both storm sewer structures and storm sewer improvements to avoid utility impacts and provide adequate utility clearances. We explore these challenges and offer mitigation solutions in greater detail in *Section 4.4.2* of this Technical Proposal. Utility relocations are not on the Project's critical path and will be coordinated with bridge foundation construction.

#### (H) NOISE BARRIER LOCATIONS

Our Team's design ensures that the proposed noise barriers—namely, Barrier BA-S05-01 and 6,225 sq ft of the existing noise barrier identified as Barrier A in the Preliminary Noise Analysis—meet the clear zone, RW, and maintenance requirements for the Project.

Noise barriers are a minimum of 5 ft within VDOT RW. Within three months following NTP, our Team anticipates submitting a Final Design Noise Analysis Report to VDOT. This document will include a re-analysis of all noise-sensitive receptors in the Project area and will indicate warranted, reasonable, and feasible noise barrier locations. With this document, VDOT and FHWA can begin their review and approval early in the design process, we can start the voting process early, and expedite noise barrier design and construction. Where possible, we will construct noise barriers prior to major roadway improvements, reducing noise impacts during construction. We will evaluate Noise Barrier A to determine if the existing acoustic profile can be exceeded while meeting the reasonableness and feasibility criteria. If not, we will meet, at a minimum, the existing conditions of acoustical line elevation of the existing sound barrier, as well as existing noise reduction and line of sight benefits.

#### (I) LIGHTING

Our Team has reviewed roadway lighting needs throughout the Project and identified several areas requiring lighting replacement due to construction impacts (roadway widening, grading, and re-alignment) in addition to the lighting replacement limits specified by the RFP: I-64 EB Sta 1023 to 1042 and Sta 1071 to 1085; I-64 WB Sta 2837 to 2847, Sta 2853 to 2860, Sta 3019 to 3036, and Sta 3064 to 3076; and Reversible Lanes Sta 6017 to 6023 and Sta 6039 to 6047. Though our Team considered concrete barrier and retaining walls to minimize impacts, these options incur significant costs and create additional maintenance and inspection needs. Instead, we propose to address these impacts by installing new light poles and infrastructure, which will provide VDOT with a low maintenance lighting system.

✓ *Our lighting replacement design utilizes 45-ft poles for limits explicitly required by the RFP and the additional impacts. Doing so reduces the number of poles compared to existing, which in turn reduces both initial cost and long-term maintenance costs for VDOT.* Furthermore, we have confirmed that using LED luminaires reduces the total electrical draw, eliminating the need for additional control centers that would increase maintenance responsibility. We will place poles so they can be constructed before decommissioning existing

lighting or, in areas that will not be impacted by other construction. Per the RFP, lighting will always remain operational for the duration of the Project.

**(J) GUARDRAIL/BARRIER**

Our Team has ensured that the clear zone within the Project limits is free from hazards or fixed objects and includes a MASH-compliant guardrail barrier system and end treatments for protection, as appropriate. As shown on the *Volume II Plans*, existing substandard guardrail within the Project limits will be upgraded to meet current standards per Appendix J of the VDOT Road Design Manual. In locations shown on the *Volume II Plans*, we will install concrete median barrier VDOT Standard MB-7D, 7E, 7F, 8A or 12B. VDOT Standard MB-7D (and BMB-3 on the managed lanes bridge over I-564) will be used to separate the reversible managed lane from the WB-only managed lane.

On the outside, VDOT Standard MB-7D will be used in locations where sound barriers will retain only a small amount of soil using reinforced sound barrier panels. In these locations, 4 ft of No. 78 stone will be placed between the sound barrier and the MB-7D.

**(K) PAVEMENT MILLING / OVERLAY AND BUILD-UP**

**Temporary Pavement:** In the initial construction phase, our Team will install shoulder strengthening on the inside and outside shoulders throughout the Project so we can use these shoulders for MOT in later stages. *Figure 3.1.5* summarizes shoulder areas suitable for temporary traffic without any strengthening.

✓ *We have sequenced construction to minimize the temporary pavement required to maintain traffic throughout construction. This provides a cost and schedule benefit to the Project.*

**Permanent Pavement:** The permanent pavement will match the pavement sections provided in the RFP. Once all construction within the roadway is complete, we will apply the final 2-in mill and overlay and rumble strips throughout for a high-quality finished pavement. We will also apply a slight variable-depth mill and overlay to adjust the crown points to be outside of vehicle wheel paths.

*Figure 3.1.5: Summary of Shoulder Areas Suitable for MOT*

Area	Section Range	Temp Pavement Design Life	Pavement Section
EB Inside Shoulder	964+34–1014+70	24 Months	11" asphalt and concrete pavement
	1062+84–1090+90	24 Months	7.5"-13.5" asphalt and concrete pavement
EB Outside Shoulder	964+34–991+18	24 Months	9"-16" asphalt and concrete pavement
	1010+95–1048+57	24 Months	8"-13.5" asphalt and concrete pavement
	1071+64–1090+90	24 Months	7"-14" asphalt and concrete pavement
WB Inside Shoulder	2810+42–1014+70	24 Months	10"-11" asphalt
	2854+43–3039+44	24 Months	7"-14" asphalt and concrete pavement
	3051+66–3082+06	24 Months	7"-10" asphalt
WB Outside Shoulder	2810+42–2823+80	24 Months	12"-15" asphalt and concrete pavement
	2858+47–3036+49	24 Months	7.5"-8" asphalt pavement
	3055+52–3066+80	24 Months	7.5"-8.5" asphalt pavement
	3066+80–3082+06	12 Months	7" asphalt pavement

**(L) TOLLING INFRASTRUCTURE**

Our Team understands the complexities of tolling and ITS infrastructure, including maintaining operations, system integration, and coordination with adjacent VDOT assets and projects. We have engaged our entire Team throughout procurement to review design concepts and constructability, and develop an efficient sequence for construction, commissioning, integration, and turnover of the tolling and ITS infrastructure. Our Team’s ITS and electrical contractor, Aldridge Electric (AE), is uniquely qualified to support this Project having recently delivered a similar scope of work for VDOT on the nearby I-64 Hampton Roads Express Lanes Segment II project.

Our design proposes toll gantries for the I-64 EB part-time shoulder lane and I-64 managed lane consistent with the RFP Concept Plans. Our Team plans to perform construction on the existing reversible managed lanes as a first order of work, allowing us to construct the WB managed lane toll gantry infrastructure—as well as supporting automatic traffic gate infrastructure—early in the Project. Our proposed tolling fiber location and construction (discussed further below) activates tolling fiber communications for TECs early in the schedule. These

considerations benefit VDOT by allowing ample time for VDOT's TSI to install equipment and perform testing and integration per the RFP.

Several tolling DMS on new sign structures on the WB lanes serve the future WB managed lane entrance. *Our sequence of work constructs sign structures on the WB lanes early in the Project to support ATC #1, allowing ample time for installation, facilitating VDOT testing of the tolling DMS, and minimizing risk for the WB managed lane opening.*

One of the more complex Project components lies in maintaining operations of the existing tolling infrastructure and sequencing the transition to the new tolling infrastructure. Our Team has developed a design and approach to coordinating and constructing key tolling infrastructure elements that reduce overall risk, ensure safety, minimize maintenance, and allow for efficient construction, benefiting VDOT, HRTAC, and end users. *Figure 3.1.6* highlights the Tolling Infrastructure throughout the Project area. A description of key elements follows.

#### Employing Past Project Knowledge in Tolling and ITS

Our Team leverages the same AE personnel that delivered I-64 HREL Segment II, providing a direct knowledge transfer that will benefit this Project. Express Lanes ITS CM **Steve Schweitzer** worked with VDOT's TSI in the I-64 Segment II project and understands VDOT's integration process. As part of the Segment II team, AE has already performed work from Indian River Rd to the Elizabeth River and understands the conduit infrastructure where new tolling fiber optic cable must be installed to reach the TOC. **Express Lanes Specialist Jeff Cheng** has worked with AE on VDOT projects requiring similar tolling system design, construction, and integration, including the I-95 Express Lanes Southern Terminus Extension and I-95 NB Rappahannock River Crossing, which interfaces with the I-95 Express Lanes Fredericksburg Extension project. With such extensive ITS and Tolling experience, our Team brings proven solutions to complex integration challenges, and minimizes risk from design through acceptance.

Figure 3.1.6: Tolling Infrastructure Overview



#### Fiber Optic Impacts and Sequence of Construction

The existing tolling infrastructure is connected to existing VDOT fiber cable that is impacted through most of the Project limits. Impacted areas include between Patrol Rd and Granby St (due to EB widening) and along the I-64 reversible lanes between Granby St and Sta 6059 (due to construction of the WB managed lane on the existing reversible lanes). Proposed tolling infrastructure will be transitioned to a new tolling fiber cable that our Project constructs from Little Creek Rd to the VDOT Traffic Operations Center at the Indian River Rd interchange and by the Segment III project from Sta 965 to Little Creek Rd (see *Figure 3.1.6*). Segment III installs a significant amount of fiber infrastructure within the Segment 1A Project limits, requiring detailed and regular coordination.

We will activate both the new tolling fiber and ATMS fiber backbones as early as possible, which will minimize risk and improve efficiency by permitting seamless cutovers, minimizing temporary work, and maximizing system redundancy. *To activate the new backbone fiber lines early, we propose to locate the lines where they can be constructed early and not be impacted by subsequent roadway and bridge construction.* Where no median is available from Sta 965 to Sta 981, we propose to install the ATMS line along the I-64 EB lanes where minimal outside widening and grading is planned. From Granby St to Sta 6045 the lines (including new tolling fiber cable where applicable) will be in the grass median areas between the managed lanes roadway and EB/WB lanes where outside widening does not affect them and where they can easily connect with the ITS equipment, TEC, and generators located in the medians. From Sta 6045 to the east, we propose to relocate the lines along the I-64 WB lanes, avoiding constraints with retaining walls, Naval Base Rd, and utilities found on the EB lanes. This continues

until Sta 6059, where a tie-in can be made with existing conduit to remain in the median. We propose to locate conduits in earth to the extent possible, which will minimize future inspection and maintenance associated with bridge-mounted conduit systems. Much of the fiber relocation will be completed as a first order of work to move the existing lines out of conflict with roadway and bridge construction.

#### Coordination with HRBT/Segment III/Segment 1B Projects

Our Team will coordinate monthly (or more frequently if necessary) in meetings with VDOT, VDOT's TSI, HRBT Segment III, and Segment 1B projects during design and construction, including civil/site design and electrical and communications interfaces. Each project installs significant infrastructure, such as fiber, DMS, and toll registry points, within other projects' limits. We will seek opportunities to reduce tolling infrastructure, such as co-locating ATMS fiber by our Project with tolling network fiber by the Segment III project and sharing electric services or generators. Reducing infrastructure will reduce future inspection and maintenance. During construction, we will compare schedules to understand the timing of impacts to existing facilities and when new tolling infrastructure must be operational. We will coordinate with the Segment 1B project for access to install new tolling fiber to the TOC located at the I-64 and Indian River Rd interchange. Our efficient cutover plan maintains operation of existing tolling infrastructure and places existing-to-remain and new tolling infrastructure on the new tolling fiber backbone per the RFP.

#### Maintenance of Existing I-64 EB Reversible Entrance

The I-64 EB entrance to the reversible lanes is modified and impacted by the Project. MOT for construction of the I-64 EB bridge over Granby St will maintain operations of the roadway gates or provide alternate physical protection with TMAs delineated by drums. We understand the need to maintain pricing DMS and guide/regulatory signing for the I-64 EB reversible lane entrance throughout construction and will coordinate removal of the two existing pricing DMS once the replacement DMSs are commissioned and operational. When I-64 EB roadway and bridge construction is complete at the I-64 EB reversible lane entrance, we will have the regulatory signs and lane use control signals for the EB part-time shoulder lane installed or provide appropriate temporary traffic control to ensure safety for this unusual roadway configuration. We will perform work on the tolling infrastructure, such as cutovers to new fiber, during the permitted closure of the reversible lanes to minimize operational risk and improve efficiency and traffic safety.

#### Tidewater Dr Toll Gantry

The existing toll gantry at the Tidewater Dr overpass receives power, including existing back-up generator power, from a service feed in the Tidewater Dr SB to I-64 EB ramp that passes under the I-64 EB over Tidewater Dr bridge.

- ✓ This service feed is impacted by roadway and bridge widening and must be replaced. *Our solution shifts alignment of the replacement service feed away from the bridge, eliminating the risk from bridge construction impacts that would disrupt power to the toll gantry.* We will complete the replacement prior to impacting the existing system and use portable generators during the cut-over to keep the gantry operational.

#### Electrical Power

Our Team has reviewed tolling infrastructure electrical needs for the Project and has determined that there is a likely impact to the existing load center at Sta 1007 from roadway and drainage construction. *We propose full replacement, instead of upsizing per the RFP, to this load center. Doing so benefits VDOT by providing a new panel with longer lifespan and lower maintenance.* The RFP plans do not show back-up generator power for the new tolling DMS at Sta 3039 and Sta 3059. We will provide back-up power to these DMS, as required per the RFP, through installation of a new generator or connection to the existing generator at the Tidewater Dr interchange, provided spare electrical capacity is available.

4.3.2 CONCEPTUAL STRUCTURAL PLANS

Our bridge engineering Team, led by **Jeremy Schlusel, PE**, has reviewed the concept structural plans for the repair, rehabilitation, and widening of five existing bridges and the deck overlay and joint closures of three existing bridges. With various configurations, different skews to bridge the roadways, and variability in age (completed in the early 1970s and then widened/modified in the 1980s and 1990s, with the I-64 reversible managed lanes bridge completed in the 1990s) these eight bridges pose a variety of different challenges for design and construction.

**Distinguished Structural Team**

WRA Bridge Group has held nine S&B contracts since the early 2000s with over 350 bridge rehabilitation projects—more than 60 on/over I-64 throughout VA—including more than a dozen along the I-64 corridor in the Hampton Roads District.

Our Team has developed solutions that achieve VDOT’s Project goals to improve safety and capacity through this corridor. Having designed over 350 similar rehabilitation and widening plans since the early 2000s for the VDOT S&B Division, our bridge engineers have the experience to deliver the most effective solutions to minimize risks to the traveling public and provide VDOT with rehabilitated structures that reduce long-term maintenance. While the Project scope is prescriptive, with specific widenings and rehabilitation goals, we have identified several potential challenges and opportunities, outlined in *Figure 3.2.1*:

 *Figure 3.2.1: Structure Plan Optimizations and Low Maintenance Solutions*

Challenge	Approach Solution	Value Added
VA Micro-Abutments Retrofitting	<ul style="list-style-type: none"> <li>Field Investigation and Backwall Failure Mode Analysis to address broken backwalls at skewed bridges</li> </ul>	<ul style="list-style-type: none"> <li>The existing broken backwalls indicate an issue with the existing bridge that will be pinpointed and fixed to ensure the issue does not recur in the future.</li> </ul>
Superstructure Widenings	<ul style="list-style-type: none"> <li>Develop composite sections to retain similar moment of inertias on widenings</li> <li>Grade A709W painted girders</li> <li>Use steel-reinforced elastomeric bearings</li> <li>Follow I&amp;M S&amp;B 81.9 and RFP and use CRR Reinforcing Steel Class I for all widened portions of superstructure</li> <li>Develop advanced structural steel submission package(s) for each bridge superstructure widening</li> </ul>	<ul style="list-style-type: none"> <li>Reduces potential differential deflections which could cause long-term deck cracking.</li> <li>Will not reduce vertical clearances.</li> <li>Reduces long-term maintenance costs on widened portions of the five bridge superstructures.</li> <li>Improves long-term performance vs. low profile steel bearings.</li> <li>Reduces potential for long-term deterioration of new concrete decks and widened/modified substructure units.</li> <li>Reduces risk of delayed delivery.</li> </ul>
I-64 over I-564 High Skew Widening	<ul style="list-style-type: none"> <li>Evaluate I-64 over I-564 superstructure widening with 3D FEM program</li> </ul>	<ul style="list-style-type: none"> <li>Provides more detailed understanding of the implications of widening and ensures no unintentional long-term design details are introduced within existing superstructure or proposed widening due to high skew of each span.</li> </ul>
Utility Conflicts	<ul style="list-style-type: none"> <li>Micro-pile foundations/construction techniques</li> </ul>	<ul style="list-style-type: none"> <li>Minimizes impacts for installation of required piles at widened bridge structures by utilizing smaller equipment and requiring less overhead clearance.</li> <li>Micro-piles require smaller pile caps, reducing impacts to nearby utilities.</li> <li>Use of a trench box reduces excavation limits.</li> </ul>
Tight Urban Conditions and MOT	<ul style="list-style-type: none"> <li>Use Latex Modified Concrete, Very Early Strength (LMCVE) for Overlay</li> <li>Partial intersection closures and detours at nighttime (at Little Creek Rd)</li> <li>Coordinate permissible lane closures in different areas of the Project</li> </ul>	<ul style="list-style-type: none"> <li>Shortening duration of lane closure reduces impacts to traveling public.</li> <li>Allows access for equipment required to construct the bridge widening.</li> <li>Lane closures of I-64 over Granby St, I-564, and Little Creek Rd streamlines MOT and construction work, reducing impact to travelers.</li> </ul>
Geometrics	<ul style="list-style-type: none"> <li>Evaluate superstructure widening bridges with curves and high skews with 3D FEM program</li> <li>Field Investigation</li> </ul>	<ul style="list-style-type: none"> <li>Provides more detailed understanding of the widening and ensures no unintentional long-term implications for the existing superstructure, substructure, or proposed widening.</li> <li>Confirms the existing geometry with survey and as-built discrepancies.</li> </ul>
Changes in Bearing Type / Configurations	<ul style="list-style-type: none"> <li>Evaluate existing substructure units with original design code(s) for change in loading conditions</li> </ul>	<ul style="list-style-type: none"> <li>Use of sliding bearings reduces potential impacts to bridge rehabilitations.</li> </ul>

Following these considerations and Part 2, Chapter 32 (Preservation, Maintenance, Repair, Widening and Rehabilitation) of the *Manual of the Structure and Bridge Division*, our Team will design and conduct work at each

bridge as described below to meet the RFP requirements. The following narrative describes proposed work on each bridge while the *Volume II* plans include additional details.

**BRIDGE STRUCTURES**

**I-64 EB over Granby St: Bridge Widening and Rehabilitation**

The original bridge structure was completed in the 1970s and widened and rehabilitated in the 1990s to accommodate the I-64 managed lanes system. It is a 240-ft, 4-simple span bridge structure with rolled beams and cover plates superstructure. The existing girders are tangent with a curved deck (thus variable width overhangs) and the existing cross-frames were detailed in a staggered pattern. The bridge structure is supported by multi-column piers and stub-abutments all supported by deep foundations.

As part of the Project, the bridge will be widened approximately 14 ft - 8 in (as measured from the outside of existing bridge) with new painted ASTM A709 Grade 50W plate girders. Due to the existing 6.25% superelevation, no vertical clearance reduction will occur with the widening on the upper side of the existing bridge superstructure. The widening will accommodate the additional lane proposed along I-64 EB. The rehabilitation work will eliminate the joints at the existing piers with link slabs and eliminate the abutments with a VA micro-abutment modification. In addition, the existing concrete deck will receive a mill and rigid overlay, new elastomeric bearings, approach slab widenings, and concrete surface repairs, as required. Deck drainage will meet the requirements of the RFP and shall be in accordance with VDOT Design Aids Chapter 22.

✓ For the substructure widening required to support the widened superstructure, we will detail the piers and stub abutments like existing conditions. To reduce overall impacts to the piers, we will design a single square column hammer head style pier to mimic existing conditions and match the 1990s widening. *The proposed column will be placed on a pile cap foundation supported by deep foundation elements and will utilize micropiles to allow for minimization of impacts to the utilities along Granby St.* The abutments will be supported by 12-in pre-stressed concrete piles driven through predrilled holes that extend to the original ground line. All work will proceed utilizing staged construction in coordination with the proposed roadway widening and will meet the RFP requirements. A summary of the final conditions is as follows:

I-64 EB over Granby St – Summary of Proposed Work (See Vol. II, Pages 68-69)			
Proposed Section	Superstructure	Piers	Abutments
<ul style="list-style-type: none"> <li>• Three 12-ft General Purpose lanes</li> <li>• Two 12-ft managed lanes (one tapered)</li> <li>• 3 ft (min) outside shoulder</li> <li>• 2 ft (min) inside shoulder</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed 14'-8" ft (from outside of existing bridge) of widening with ASTM A709 Gr. 50W plate girders</li> <li>• Elimination of all joints</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> <li>• Recoat existing steel</li> </ul>	<ul style="list-style-type: none"> <li>• New single column hammer head</li> <li>• Concrete substructure surface repairs to existing piers</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing abutments to VA micro-abutments with approach slab widening</li> <li>• Existing stub abutment to be widened and detailed with VA micro-abutment</li> <li>• Concrete substructure surface repairs to existing abutments.</li> <li>• Widen and repair existing slope protection</li> </ul>

**I-64 WB over Granby St: Bridge Rehabilitation**

The original bridge structure was completed in the 1970s and has had no major rehabilitations. The existing bridge is a 280-ft, four-simple span bridge structure with rolled beams and cover plates superstructure. The structure is supported by multi-column piers and stub-abutments all supported by deep foundations. The proposed rehabilitation will eliminate the joints at the existing piers with link slabs, and the abutments with a VA micro-abutment modification, and will widen the approach slabs. In addition, the existing steel bearings will be replaced with elastomeric bearings, the existing concrete deck will be milled, and a new rigid overlay will be placed. Deck drainage will meet RFP requirements and comply with VDOT Design Aids Chapter 22. Per the RFP, no modifications to the current lane configuration will occur upon completion of this Project. *As part of our Team's*

✓ *concept and approved ATC #1, the proposed work will be staged and has been detailed to eliminate the use of the steel plates and multiple set-ups of MOT, which improves safety to the traveling public, provides a better long-term solution to VDOT, and improves safety along the work zone as all work will be completed behind a barrier.* The proposed SOC will coordinate with the proposed roadway modifications and meet the RFP requirements. A summary of the final conditions is as follows:

I-64 WB over Granby St – Summary of Proposed Work (See Vol. II, Page 78)

Proposed Section	Superstructure	Abutments
<ul style="list-style-type: none"> <li>• Two 12-ft lanes</li> <li>• 10 ft (min) outside shoulder</li> <li>• 5.33 ft (min) inside shoulder</li> </ul>	<ul style="list-style-type: none"> <li>• Elimination of all joints using link-slabs</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing to VA micro-abutments with appropriate slab widening</li> </ul>

### I-64 EB over I-564: Bridge Widening and Rehabilitation

The original bridge, completed in the 1970s, is a 416-ft, four-simple-span structure with Gr 50 Plate girders (early version of Gr 50 which followed ASTM A6 Standards). The bridge is located on a horizontal curve with high-skew substructure units to accommodate I-564 and the ramp lane and has a variable super-elevated cross slope to meet the I-64 EB roadway geometrics. The bridge has had no major rehabilitations. The existing girders are tangent with a curved deck (thus variable width overhangs) and the existing cross-frames were detailed in a staggered pattern. The existing multi-column piers and stub abutments are supported by deep foundations.

The bridge will be widened approximately 18 ft – 8 in (as measured from the outside of existing bridge) with new painted ASTM A709 Gr 50W plate girders. No vertical clearance reduction will occur due to the widening being on the upper side variable superelevation of the existing bridge superstructure. The widening will accommodate the additional lanes proposed along I-64 EB and the rehabilitation work will complete expansion joint re-construction at the piers. The abutments will be modified with a VA micro-abutment. In addition, the existing concrete deck will receive a mill and rigid overlay, new elastomeric bearings, approach slab widenings and concrete surface repairs as required. Deck drainage will meet RFP requirements and shall comply with VDOT Design Aids Chapter 22. *To achieve the Project goals and provide the best long-term solution, our Team evaluated several design alternatives at this location, including types of piers (hammer-head vs. multi-column and a two versus three girder widening).* Our bridge engineers focused on:

**Framing Plan** - The original framing plan has staggered cross-frames (i.e.: not in line with each other) and high skew/curvature of the existing roadway. The proposed widening could induce out-of-plane bending at the connector plates to web interface and cracks could develop over time if the proposed new cross-frames are detailed too close to the existing. Our Team studied various concepts to develop one with the least impact to existing conditions. This included evaluation of extending the cross-frames in-line with the current exterior bay, continuing a similar staggered pattern, or a variable offset from the existing cross-frames, but all in-line for the widened section. In addition, with the cross-frame study, we evaluated a two-girder vs. a three-girder system. Our engineers determined that three girders are required to avoid overstressing the existing exterior girder; it will now be exposed to a full lane of live load which it was not originally designed to handle. Using this information, our proposed widening will detail the cross-frames in the widened section to be off-set from the current layout, minimizing potential issues for a new connection to the existing 3/8 in, 7/16 in, or 1/2 in web plates. The new cross-frames will be geometrically located to minimize the potential for out-of-plane bending issues with the current web plates. *Our Team will develop a simple 3D FEM model to ensure that the proposed detailing does not introduce any long-term fatigue issues associated with the proposed widening.* This approach is similar to ones that WRA has taken to address potential fatigue issues on other high-skew or unusual structural steel detailed bridge structures, such as the I-64 over Maury River, I-64 over Shockoe Creek, and I-295 over Beaverdam Creek projects.

**Geometrics** – Due to the high curvature of I-64 and I-564, Piers 2 and 3, and Abutment B widenings were identified as challenging locations where existing geometrics are combined with the proposed widening. For Piers 2 and 3, our designers had to account for the existing drainage facilities located in the median and along the shoulder on I-564. At Abutment B, due to the high skew and proximity to the I-564 ramp lanes, the widening and layout had to account for the existing slopes of the two intersecting roadways and existing retaining wall along the I-564 ramp below the bridge structure. *Our design solution does not impact the retaining wall along I-564 and does not impact the ramp from I-564 to I-64 EB for the modified slopes required for the widening. For the piers, our Team’s solution minimizes the impacts along I-564 by using multi-column piers supported by deep foundation elements.* The abutments will be supported by 12-in pre-stressed concrete piles with all piles driven through predrilled holes that extend to the original ground line. All this proposed work will proceed utilizing

staged construction in coordination with the proposed roadway widening and will meet the RFP requirements. A summary of the final conditions is as follows:

I-64 EB over I-564 – Summary of Proposed Work (See Vol. II, Pages 70-71)			
Proposed Section	Widening	Piers	Abutments
<ul style="list-style-type: none"> <li>• Three 12-ft General Purpose lanes</li> <li>• One 12-ft managed lane</li> <li>• 2 ft (min) outside shoulder</li> <li>• 3 ft (min) inside shoulder</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed 18'-8" ft (from outside of existing bridge) of widening with ASTM A709 Gr. 50W plate girders</li> <li>• Expansion joint reconstruction</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> <li>• Steel repairs</li> <li>• Recoat existing steel</li> </ul>	<ul style="list-style-type: none"> <li>• New multi-column piers supported on deep foundations.</li> <li>• Concrete substructure surface repairs to existing piers</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing abutments to VA micro-abutments with approach slab widening</li> <li>• Existing stub abutment to be widened and detailed with VA micro-abutment</li> <li>• Concrete substructure surface repairs to existing abutments.</li> <li>• Widen and repair existing slope protection</li> </ul>

**I-64 EB over Little Creek Rd: Bridge Widening and Rehabilitation**

The original bridge structure was completed in the 1970s and has had no major rehabilitations. The existing bridge is a 186-ft, four-simple-span structure with rolled beams and cover plates superstructure on a normal crown. The bridge structure is supported by multi-column piers and stub-abutments all supported by deep foundations. The proposed rehabilitation will eliminate the joints at the existing piers with link slabs and abutments with a VA micro-abutment modification and will widen the approach slabs. We will widen the bridge approximately 12 ft-4 in (as measured from the outside of existing bridge) with new painted ASTM A709 Gr 50W plate girders. Our final design detailing will take into account that no vertical clearance reduction will occur due to the widening. This requires a total girder height no greater than approximately 28-in to account for the geometrics of the superstructure widening, including cambers and the existing typical section of Little Creek Rd. The bridge widening will accommodate the proposed widening of I-64 EB and modifications to the I-564 ramp lanes, plus the rehabilitation work to eliminate the joints at the existing piers and abutments. The existing concrete deck will also receive a mill and rigid overlay, new elastomeric bearings, approach slab widenings, and concrete surface repairs as required. Deck drainage will meet RFP requirements and shall comply with VDOT Design Aids Chapter 22.

✓ For the substructure widening required to support the widened superstructure, we will detail the piers and stub abutments in a similar fashion to existing conditions, *including a single square column hammer head style pier which will reduce the overall impacts for the piers*. The proposed column will be placed on a pile cap foundation supported by deep foundation elements and will utilize 12-in pre-stressed concrete piles. The abutments will be supported by 12-in pre-stressed concrete piles driven through predrilled holes that extend to the original ground line. All this proposed work will proceed utilizing staged construction in coordination with the proposed roadway widening and will meet RFP requirements. A summary of the final conditions is as follows:

I-64 EB over Little Creek Rd – Summary of Proposed Work (See Vol. II, Pages 72-73)			
Proposed Section	Superstructure	Piers	Abutments
<ul style="list-style-type: none"> <li>• Four 12-ft General Purpose lanes</li> <li>• One 12-ft managed lanes</li> <li>• 14 ft (min) outside shoulder</li> <li>• 3 ft (min) inside shoulder</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed 12'-4" ft (from outside of existing bridge) of widening with ASTM A709 Gr. 50W plate girders</li> <li>• Elimination of all joints</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> <li>• Recoat existing steel</li> </ul>	<ul style="list-style-type: none"> <li>• New single column hammer head</li> <li>• Concrete substructure surface repairs to existing piers</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing abutments to VA micro-abutments with approach slab widening</li> <li>• Existing stub abutment to be widened and detailed with VA micro-abutment</li> <li>• Concrete substructure surface repairs to existing abutments.</li> <li>• Widen and repair existing slope protection</li> </ul>

**I-64 WB over Little Creek Rd: Bridge Rehabilitation**

The original bridge structure was completed in the 1970s and has had no major rehabilitations. The existing bridge is a 475-ft, nine-simple-span structure with rolled beams and cover plates superstructure. The structure is supported by multi-column piers and stub-abutments all supported by deep foundations. The proposed rehabilitation will eliminate the joints at the existing piers with link slabs and abutments with a VA micro-abutment modification and will widen the approach slabs. The existing steel bearings will be replaced with elastomeric bearings, the existing concrete deck will be milled, and a new rigid overlay will be placed. Deck drainage will meet RFP requirements and shall comply with VDOT Design Aids Chapter 22. Per the RFP, no modifications to the current lane configuration will occur upon completion of the Project.

✓ *As part of our Team’s concept and approved ATC #1, the proposed work will be staged and has been detailed to eliminate use of steel plates and multiple MOT set-ups, which improves safety to the traveling public, provides a better long-term solution to VDOT, and improves safety along the work zone as all work will be completed behind a barrier.* The proposed SOC will be in coordination with the proposed roadway modifications and will meet the RFP requirements. A summary of the final conditions is as follows:

I-64 WB over Little Creek Rd – Summary of Proposed Work (See Vol. II, Page 78)		
Proposed Section	Superstructure	Abutments
<ul style="list-style-type: none"> <li>• Two 12-ft lanes</li> <li>• 10 ft (min) outside shoulder</li> <li>• 5.33 ft (min) inside shoulder</li> </ul>	<ul style="list-style-type: none"> <li>• Elimination of all joints using link-slabs</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing to VA micro-abutments with appropriate slab widening</li> </ul>

**I-64 EB and WB over Tidewater Dr: Bridge Widening and Rehabilitation**

The original bridge structures were completed in the 1970s, then widened and rehabilitated in the 1970s and 1980s. The existing 229 ft EB and 202 ft WB bridges are both four-simple-span structures with rolled beams and cover plates superstructures on a normal crown. The bridge structure is supported by multi-column piers and stub-abutments all supported by deep foundations. As part of this Project, the I-64 EB bridge will be widened approximately 11 ft – 8 in (as measured from the outside of existing bridge) and the I-64 WB bridge will be widened approximately 4 ft – 9 in (as measured from the outside of existing bridge) with new painted ASTM A709 Grade 50W plate girders. Due to the existing normal crown, the proposed girders will need to be shallower than the existing rolled beams (total height of approximately 28-in) to avoid reducing existing vertical clearances when taking into account the cambers/deflections and existing geometrics. This is achievable using Gr. 50 structural steel instead of the existing Gr. 36 structural steel. The I-64 EB widening will accommodate the additional lane proposed along I-64 EB. The rehabilitation work will eliminate the joints at the existing piers with link slabs and abutments with a VA micro-abutment modification. In addition, the existing concrete deck will receive a mill and rigid overlay, new elastomeric bearings, approach slab widenings and concrete surface repairs as required. *Due to the existing configuration of the approach slabs, our Team will detail the approach slabs to meet the minimum 20 ft per the RFP (see the Design Concept drawings for our unique solution to reduce the impact).* Deck drainage will meet RFP requirements and shall comply with VDOT Design Aids Chapter 22.

✓ For the substructure widening required to support the widened superstructure, the piers and stub abutments will be detailed in a manner similar to the existing conditions. To reduce the overall impacts for the piers, a single square column hammer-head-style pier will be designed for I-64 EB and detailed to mimic the existing conditions; for the I-64 WB, which is only required to support a single girder, the pier will be single square column with a small pier cap to accommodate the bearings. *The columns for both EB and WB piers will be placed on a pile cap foundation, which will be supported by deep foundation elements and will utilize micropiles to avoid fouling the clearance zone for the overhead electric lines and minimize impacts to the existing utilities along Tidewater Dr.* The abutments will be supported by 12-in pre-stressed concrete piles driven through predrilled holes that extend to the original ground line. All this proposed work will proceed utilizing staged construction in coordination with the proposed roadway widening. The proposed SOC will coordinate with the roadway modifications and will meet RFP requirements. A summary of the final conditions is as follows:

I-64 EB over Tidewater Dr – Summary of Proposed Work (See Vol. II, Pages 74-75)			
Proposed Section	Superstructure	Piers	Abutments
<ul style="list-style-type: none"> <li>• Three 12-ft General Purpose Lanes</li> <li>• One 12-ft Auxiliary Lane</li> <li>• One 12-ft Managed Lane</li> <li>• 4 ft (min) inside shoulder</li> <li>• 4 ft (min) outside shoulder</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed 11’-8” ft (from outside of existing bridge) of widening with ASTM A709 Gr. 50W plate girders</li> <li>• Elimination of all joints</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> <li>• Steel repairs</li> <li>• Recoat existing steel</li> </ul>	<ul style="list-style-type: none"> <li>• New single column hammer head</li> <li>• Concrete substructure surface repairs to existing piers</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing abutments to VA micro-abutments with approach slab widening</li> <li>• Existing stub abutment to be widened and detailed with VA micro-abutment</li> <li>• Concrete substructure surface repairs to existing abutments.</li> <li>• Widen and repair existing slope protection</li> </ul>

I-64 WB over Tidewater Dr – Summary of Proposed Work (See Vol. II, Pages 76-77)

Proposed Section	Superstructure	Piers	Abutments
<ul style="list-style-type: none"> <li>• Three 12-ft General Purpose Lanes</li> <li>• Two 12-ft Auxiliary Lanes (Weave/Aux. Lanes)</li> <li>• One 12-ft Managed Lane</li> <li>• 6 ft (min) inside shoulder</li> <li>• 4 ft (min) outside shoulder</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed 4'-9" ft (from outside of existing bridge) of widening with ASTM A709 Gr. 50W plate girders</li> <li>• Elimination of all joints</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> <li>• Steel repairs</li> <li>• Recoat existing steel</li> </ul>	<ul style="list-style-type: none"> <li>• New single column hammer with cap</li> <li>• Concrete substructure surface repairs to existing piers</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing abutments to VA micro-abutments with approach slab widening</li> <li>• Existing stub abutment to be widened and detailed with VA micro-abutment</li> <li>• Concrete substructure surface repairs to existing abutments.</li> <li>• Widen and repair existing slope protection</li> </ul>

**I-64 Managed Lanes over I-564 & Little Creek Rd: Bridge Rehabilitation**

The original bridge structure was completed in the 1990s and has had no major rehabilitations. The existing bridge is an 820-ft, seven-span bridge that consists of two units with a tooth joint located at Pier 4. At Piers 2 and 3, the superstructure is supported by structural steel box cross girders supported by individual columns. The remaining piers are all two-column, supported by deep foundations. The two abutments are stub-style, also supported by deep foundations. The proposed rehabilitation will replace the existing tooth joint at existing Pier 4 with a new tooth joint, eliminates the joints at the abutments with a VA micro-abutment modification, and widens the approach slabs. In addition, the existing steel bearings will be replaced with elastomeric bearings. The deck will be modified to install a BMB-3 in the middle and the entire deck will be milled and a new rigid overlay installed. Deck drainage will meet RFP requirements and shall comply with VDOT Design Aids Chapter 22. The proposed SOC will coordinate with the proposed roadway modifications and meet RFP requirements. A summary of the final conditions is as follows:

**✓ Safer, Faster, Cost-Saving Solution**

As a benefit to the traveling public, our Team’s solution reduces the closure time of the I-64 managed lanes bridge over I-564 and Little Creek Rd and installs the new BMB-3 behind a single face barrier. Fewer closures increase safety and benefits the traveling public while reducing user costs.

I-64 Managed Lanes over I-564 & Little Creek Rd – Summary of Proposed Work (See Vol. II, Page 79)

Proposed Section	Superstructure	Abutments
<ul style="list-style-type: none"> <li>• One 12-ft Managed Lane</li> <li>• One 12-ft Reversible Managed Lane</li> <li>• 2 ft outside shoulder (each lane)</li> <li>• 1 ft inside shoulder (each lane)</li> </ul>	<ul style="list-style-type: none"> <li>• Expansion joint reconstruction (replace tooth joint)</li> <li>• New rigid overlay</li> <li>• New elastomeric bearings</li> <li>• Installation of BMB-3</li> </ul>	<ul style="list-style-type: none"> <li>• Modify existing to VA micro-abutments with appropriate slab widening</li> </ul>

**RETAINING WALLS**

The retaining walls proposed within the Project corridor represent a major investment in both initial construction and long-term asset maintenance and inspection. The RFP Conceptual Plans show approximately 4,420 LF of potential retaining wall and/or proposed concrete parapet with moment slab and 1,656 LF of ground or barrier mounted sound barrier. Our Team organized a Retaining Walls Task Group of construction personnel and roadway, geotechnical, and structural engineers to evaluate opportunities in roadway geometrics, grading, and alternative structural solutions while meeting all RFP requirements.

✓ Our Task Group proposes the following strategies to reduce retaining wall lengths:

- *Optimize existing RW limits by extending fill slopes to reduce or eliminate wall along stretches of roadway widening where environmental, drainage, or settlement impacts are low.* This occurs along I-64 EB Sta 980+65 to Sta 981+27 and I-564 Ramp B Sta 14+53 to Sta 19+50. Also optimize grading in areas of the proposed ITS devices to eliminate some of these retaining walls at I-564 Ramp D Sta 40+00; I-64 EB Sta 983+50, Sta 991+00, and Sta 999+00; and I-64 WB Sta 2814+00 and Sta 2859+50.
- Use sound barriers combined with short height retaining walls (approximately 6 ft exposed height or less) to simplify the structural system at Granby Ramp A Sta 202+75 to Sta 210+59 and I-64 WB Sta 2842+60 to Sta 2847+45. *This approach eliminates the need for a separate MSE wall with moment slab and retains the roadway barrier with a gravel in-fill cushion in front of the ground-mounted sound barrier system.*
- Maintain a portion of an existing retaining wall and remove and replace the parapet system on top to accommodate the slight change in shoulder elevation along I-64 EB Sta 1022+83 to 1025+75 with the lightweight noise barrier and I-64 EB Sta 1025+75 to Sta 1033+00 where there is a proposed change in

shoulder cross slope and no proposed change to the I-64 edge of pavement alignment. *This approach reduces construction duration, impacts to traffic, and costs associated with replacing the existing retaining wall in its entirety.*

- *Our Team incorporated top-down construction walls using either steel sheet pile or soldier pile walls in tight areas between mainline I-64 and the managed lanes to reduce or eliminate impacts to traffic during construction.* A concrete facing and cap will be constructed to ensure no steel elements are exposed per RFP requirements. In addition, after evaluating the proposed cross sections, our Team developed modified VDOT standard concrete barrier details (MB-7F) consisting of modified barrier retaining wall. The development of these modified standard barriers addresses grading and drainage challenges along I-64 EB Sta 982+50 and 987+86 and at ITS device at I-64 EB Sta 1021+00 to reduce construction impacts to traffic, construction duration, and cost associated with conventional retaining walls. Approximately 606 LF of standard barrier has been revised to the modified barrier retaining wall to address grading, drainage, and ITS needs.

**✓ 20% Retaining Wall Reduction**

While there is no change to the sound barrier wall lengths shown in the RFP, our Team reduced the total retaining wall length by approximately **888 LF**, or **20%**, as shown in Figure 3.2.2. See Vol. II plans, page 80 for additional details on the Retaining Walls.

The proposed retaining walls consist of MSE walls from VDOT’s approved retaining wall system list, concrete cantilever walls, or top-down construction walls. Retaining walls that require traffic protection at the top will be designed to resist traffic impact loads in accordance with AASHTO LRFD and VDOT’s Manual of Structure and Bridge. MSE wall systems will be constructed with a moment slab and barrier system and concrete cantilever walls will be constructed with integrated bridge parapet (BPB-4) per RFP requirements.

Figure 3.2.2: Retaining Walls Summary

Location	Ancillary Asset	RFP		DB Team	
		Concept Type	Concept Length	DB Team Concept Type	Concept Length
EB 980+65 to 981+27 I-564 Ramp B 14+53 to 19+50	No	Potential Retaining Wall	559	Std. Concrete Median Barrier (MB-7F) and 2:1 Slope	0
EB 991+07 to 997+35	No	RW/Barrier w/Moment Slab	628	MSE wall	628
I-564 Ramp D 34+25 to 40+08	No	RW/Barrier w/Moment Slab	559	Special Design RW (H: 2' to 6')	583
I-564 Ramp D 40+00	ITS	Potential Retaining Wall	37	Existing grade (Wall to Sta 40+08 adequate)	0
EB 1007+43 to 1011+47	No	RW/Barrier w/Moment Slab	404	MSE wall	404
EB 1025+75 to 1033+00	No	RW/Barrier w/Moment Slab	725	Remove/Reconstruct Barrier on Existing RW	725
EB 1036+00 to 1042+11	No	RW/Barrier w/Moment Slab	611	Special Design RW (H: 2' to 6')	611
EB 1059+72 to 1060+47	Culvert	Potential Retaining Wall	95	MSE wall	95
EB 978+44 to 982+50	No	Potential Retaining Wall	406	Sheet Pile or Soldier Pile and Lagging Wall	406
EB 983+50	ITS	Potential Retaining Wall	60	Guardrail/ITS Pad/2:1 Slope	0
EB 991+00	ITS	Potential Retaining Wall	32	Guardrail/ITS Pad/2:1 Slope	0
EB 996+00	ITS	Potential Retaining Wall	65	Special Design RW (H: 2' to 6')	65
EB 999+00	ITS	Potential Retaining Wall	51	Maintain existing slope	0
EB 1012+50	ITS	Potential Retaining Wall	75	54" Modified Tall Wall	75
WB 2814+00	ITS	Potential Retaining Wall	43	Guardrail/ITS Pad/2:1 Slope	0
WB 2859+50	ITS	Potential Retaining Wall	70	Guardrail/ITS Pad/2:1 Slope	0
WB 3045+20 to 3045+55	Sidewalk	Potential Retaining Wall	60	Extend Wing Wall of Bridge over Tidewater Dr	0
		<b>Total</b>	<b>4,480</b>	<b>Total</b>	<b>3,592</b>

Figure 3.2.3: STD Barrier to Modified Barrier/Tall Wall

Location	Ancillary Asset	RFP		DB Team	
		RFP Concept Type	Concept Length	DB Team Concept Type	Concept Length
EB 982+50 to 987+86	No	Std. Concrete Median Barrier (MB-7F)	536	Modified Barrier Retaining Wall	536
EB 1021+00	ITS	Std. Concrete Median Barrier (MB-7F)	70	Modified Barrier Retaining Wall	70
		<b>Total</b>	<b>606</b>	<b>Total</b>	<b>606</b>

Figure 3.2.4: Retaining Wall and Noise Barrier Combinations

Location	Ancillary Asset	RFP		DB Team	
		Concept Type	Concept Length	Concept Type	Concept Length
Granby Ramp A 202+30 to 202+75	Noise Barrier	Noise Barrier with MB-7F	45	Noise Barrier with < 2 ft fill behind panel	45
Granby Ramp A 202+75 to 210+59 WB 2842+60 to 2847+45	Noise Barrier	Noise Barrier with MB-7F	1269	Combination Retaining Wall + Noise Barrier using retaining panels	1269
WB 2847+45 to 2847+95	Noise Barrier	Noise Barrier with MB-7F	50	Noise Barrier with < 2 ft fill behind panel	50
EB 1022+83 to 1025+75	Noise Barrier	RW/Noise Barrier Combo	292	Remove/Reconstruct Barrier + Noise Barrier	292
		<b>Total</b>	<b>1,656</b>	<b>Total</b>	<b>1,656</b>

### MAJOR DRAINAGE STRUCTURES PROPOSED

No major drainage structure modifications or installations are required for the scope of this Project. For further details on the overall Project drainage solution, see the *Volume II* plans and *Section 4.3.1*.

# 4.4 PROJECT APPROACH



#### 4.4.1 ENVIRONMENTAL MANAGEMENT

Our Team builds on direct experience managing environmental risks and efficiently acquiring permits in the Project region, as well as implementing environmental best practices and lessons learned to secure and comply with environmental permits. WRA will lead all aspects of environmental management, including compliance, permitting, and addressing conditions/areas of concern. **Taylor Sprenkle, PWD**, leads our Team's environmental management and permitting. Taylor recently led permitting efforts for the Hampton Roads Bridge-Tunnel Expansion project, where he worked with VDOT and regulatory agencies to identify and address environmental issues that presented critical schedule risks. **Joe Felton, PWD** and Certified Nutrient Management Planner (CNMP), serves as the Project's Environmental Compliance Manager (ECM). Joe has over 22 years of experience in the environmental industry and is currently environmental manager for the VDOT Rte 58 Lover's Leap project, reviewing permitting/construction materials and submitting all required documentation to USACE and DEQ. **Nick Nies, AICP**, ensures our Team meets all National Environmental Policy Act (NEPA) commitments, applying over 22 years of NEPA experience (and 10 directly with VDOT environmental programs). **Makis Mataragas** applies his construction-side perspective to the Project's environmental management and holds our Team accountable to all SWPPP certifications through daily management, oversight, and recordkeeping. He currently applies his successful environmental management experience on Myers' Rte 58/Laskin Rd reconstruction and bridge replacement project, where the team consistently meets compliance requirements in an environmentally sensitive 2-mile stretch of road and bridge over Linkhorn Bay in the City of Virginia Beach.

#### APPROACH TO ENVIRONMENTAL MANAGEMENT

##### Environmental Management Plan (EMP):

Our Team takes a two-fold approach to mitigating environmental schedule risk: (1) ensure expedited receipt of permits, and (2) ensure compliance during construction. Our EMP drives this by successfully identifying environmental risks and outlining mitigation procedures. Joe reviews and updates the EMP semi-annually. The document includes commitments and risks, permitting strategy (including RFI protocols), compliance strategy (including education, monitoring, reporting, and corrective actions), and the following components:

- Organization of Environmental Design, Management, and Inspection personnel including contact information and qualifications
- Overview of all permitting, commitments, and studies
- Table of inspection frequencies
- Timelines for submittal of reports and notifications to VDOT and regulatory agencies
- Narrative describing functional relationship between ECM, Construction Manager, and QAM
- Narrative describing key milestones and environmental scope of work associated with their performance. Table or record of reported non-compliances, including dates observed, pertinent information, a required correction date, and the actual date of correction signed by the ECM
- Protocols for review, sign-off, and approval prior to beginning and upon completion of activities with environmental commitments on the Project schedule
- Descriptions of routine field meetings between DB and subcontractor management, field staff, and VDOT on environmental permit conditions, best management practices, EMP updates and environmental issues
- Qualifications of environmental staff on-site during operations involving environmental commitments
- List of Project contacts at all applicable permitting and third-party agencies
- Sample inspection checklists and reports
- Description of the process for developing and implementing Corrective Actions to address compliance deficiencies
- Description of submissions from ECM to QAM to facilitate monthly certifications by the QAM that the Team has adhered to processes and procedures within the EMP
- Description of Project-specific management or data collection tools describing how these tools will be maintained, by whom, and information necessary to access data
- Project-specific communication and outreach protocols for third-party stakeholders or impacted communities
- Descriptions of Project-specific training for Project staff, contractors, and sub-contractors

**Environmental Compliance:**

Our Team maintains environmental compliance throughout all phases of construction. Joe will review and update the EMP semi-annually. The EMP documents our comprehensive compliance strategy, including:

- An electronic permit compliance notebook (e.g., PlanGrid), storing all relevant environmental permits and permit conditions. It is regularly updated to ensure compliance with all permits/regulations.
- Instructions for regular erosion and sediment control (E&S) inspections, maintaining an up-to-date record set of E&S drawings, and participating in C-107 inspections twice a week.
- Environmental compliance training for construction crews before work begins and periodically throughout construction, covering environmental areas of concern.
- Limiting construction impacts by delineating non-disturbed environmental features, minimizing tree clearing, conducting temporary work on mats, and restoring temporarily impacted wetland areas to pre-construction contours.

**Communication Methods:**

The EMP documents our Team’s communication methods, which include:

- An Environmental Commitments Plan that depicts the location of any environmental constraints. We distribute this living document to all Team members to ensure responsible design/construction.
- Regular coordination meetings between design and construction personnel including Taylor, **John Maddox** (DM), **Jeff Snow** (CM), and **Tom Heil** (EEiC). This communication ensures all disciplines address environmental constraints. This eliminates rework during later stages of design and avoid potential permit modifications.
- Regulatory agency pre-application meeting(s) prior to submitting permit applications. Our Team meets with regulatory personnel responsible for permitting the Project, including Jeff Hannah (VDEQ) and George Janek or Robert Berg (USACE). We discuss Project permitting activities, including proposed impact limits, construction means and methods, and schedule constraints.
- Regular field meetings and inspections with regulatory personnel. With this joint inspection approach, our Team can respond rapidly to any environmental issues discovered during inspections, rather than waiting to receive a formal report from regulatory personnel.

**AVOIDING/MINIMIZING PROJECT IMPACTS TO ENVIRONMENTAL RESOURCES**

To expedite environmental permit issuance, our Team conducts fieldwork and performs technical services upon NTP to verify the information provided in the RFP. Verifications may include wetland delineation, stream assessments (Unified Stream Methodology [USM]), Threatened and Endangered (T&E) species reviews, bat bridge inspections, Phase 2 ESAs, asbestos inspections, and final design noise analysis. We depict all environmental resources (including those not identified in the RFP) in our Environmental Commitments Plan and distribute to all Team members to ensure responsible design/construction.

✔ *Compared to the impacts reported in the RFP, our Volume II Plans would reduce impacts to Waters of the United States (WUS) by 0.17 acres.* Our Team’s proposed impacts would qualify for a USACE Nationwide Permit 23

(Approved Categorical Exclusions). Our Team would adhere to the 12 401 Water Quality Certification Conditions so that a separate DEQ permit would not be required. Since we anticipate no impacts to tidal wetlands/waters or streams with drainage areas greater than 5 square miles, no VMRC permits would be required. Permanent impacts to regulated features will require the purchase of approximately 0.01 acres of nontidal vegetated wetland credits. We propose no mitigation for impacts to nontidal unconsolidated bottom (PUB) or other WUS since hydrologic

Figure 4.1.2: Expected Environmental Impacts

Design	Impacts
RFP Design	0.19 acres nontidal WUS No stream impacts
Volume II Plans	0.02 acres WUS consisting of : 238 sq ft (<0.01 acres) nontidal emergent wetlands 361 sq ft (<0.01 acres) nontidal unconsolidated bottom 221 sq ft (<0.01 acres) other WUS* No stream impacts  *Likely jurisdictional ditches, to be confirmed with additional technical services

connectivity will be maintained throughout and after construction. Based on our Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) query conducted on July 27, 2022, approximately 16.94 nontidal wetland credits are available from commercial banks. In sum, we anticipate successful mitigation.

**ADDRESSING ENVIRONMENTAL CONDITIONS / AREAS OF CONCERN**

Our approach to environmental conditions/areas of concern includes permits and compensatory mitigation, as described above, and the additional conditions/areas of concern identified in *Figure 4.1.3*.

*Figure 4.1.3: Environmental Compliance Strategies*

Environmental Concerns	Risk Mitigation Strategy
NEPA	<ul style="list-style-type: none"> <li>• Carry out all NEPA commitments and support with appropriate documentation</li> <li>• Avoid Project scope/footprint changes that may require additional NEPA work and unanticipated schedule changes</li> <li>• Support VDOT’s final re-evaluations before RW acquisition/construction (EQ-103, EQ-200, EQ-201)</li> </ul>
Cultural Resources	<ul style="list-style-type: none"> <li>• Previously concluded Section 106 No Adverse Effect determination (dated August 2, 2021) will remain valid</li> <li>• Treat historic properties as design constraints: avoid impacting them beyond what RFP Conceptual Plans show</li> <li>• Notify VDOT if Project-related activities could impact the viewshed of historic properties</li> </ul>
T&E Species	<ul style="list-style-type: none"> <li>• Upon NTP, re-run threatened and endangered species database searches</li> <li>• Engage resource agencies early in design/permitting process to determine potential impacts to T&amp;E species</li> <li>• Avoid and minimize impacts to T&amp;E species to the greatest extent practicable</li> <li>• Conduct bat bridge inventories every two years</li> <li>• Follow VDOT’s bat special provision SP522-000130-01 through 12/21/22 and follow SP522-000130-02 on and after 12/22/22 (no tree removal for trees greater than or equal to 3 in DBH from April 1 to November 14)</li> <li>• Follow VDOT’s nesting bird special provision</li> </ul>
Hazardous Materials	<ul style="list-style-type: none"> <li>• Based on our <i>Volume II Plans</i>’ proposed RW acquisition, no Phase 2 studies are warranted (RW property takes appear to be to an existing VDOT facility and thus would not require Phase 2 studies; will confirm as part of our additional technical services)</li> <li>• Perform asbestos inspections on all structures not previously inspected and remediate per VDOT procedures</li> <li>• Handle hazardous materials in accordance with all applicable federal, state, and local environmental regulations</li> <li>• Prepare a SPCC plan prior to the start of construction and submit it to VDOT for review</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>• Adhere to relevant air quality requirements and limit emissions of VOC and NOx during construction</li> </ul>
Noise Mitigation	<ul style="list-style-type: none"> <li>• Complete final design noise analysis</li> </ul>

**SCHEDULE INTEGRATION**

Obtaining environmental permits and environmental approvals in a timely manner is a Project schedule and planning priority because construction within regulated features cannot begin until permits are issued. Based on the construction sequencing noted in *Section 4.5.1*, acquisition of Project permits is not a critical path activity. However, to begin construction of the I-64 EB outside widening of roadways and bridges, some regulated features may be impacted. To ensure there is no delay in proceeding with the outside widening, approval of the Project Permits is envisioned to occur on or about August 1, 2023, while final roadway approval is scheduled for November 14, 2023. Therefore, our expectation is that final permit approval will precede final roadway approval. Once final plans are approved, work can commence on the I-64 EB widening and bridge efforts.

**4.4.2 UTILITIES**

**APPROACH TO UTILITY COORDINATION, ADJUSTMENTS, AND RELOCATIONS**

Avoiding conflicts is our Team’s top utility coordination priority. Our Team has studied the presence, ownership, and horizontal/vertical location of each utility along the Project corridor and refined the design to eliminate conflicts wherever possible. This assessment and coordination process will continue throughout final design to avoid and mitigate impacts to the greatest extent feasible. Where we cannot avoid conflicts, we successfully relocate utilities through early, frequent, and open communication with the utility companies.

Richard Bennet and **Dan Seli** (Utility Design) both have over 30 years of experience coordinating and relocating utilities impacted by roadway projects throughout the Commonwealth. **Chris Mansfield** (Construction Utility Coordinator) has more than five of years of experience relocating utilities on roadway projects. Specifically, our

Team members have extensive experience with Verizon, City of Norfolk DPU, HRSD, Dominion Energy, Virginia Natural Gas and the numerous communication utilities that have facilities within the Project corridor. The relationships the Team has developed with the utility owners over the past 30 years will help facilitate the discussions, define solutions, maintain schedules, and mitigate any risks associated with utility relocations.

Our Team has found that refined design packages streamline the utility relocation processes. We also implement a work plan if we encounter a previously unidentified utility during construction. This active approach to utility coordination and relocation follows the *VDOT Utility Manual of Instructions and Utility Relocation Policies & Procedures*. Our hands-on coordination continues throughout the Project to keep the utility companies focused and cooperating to achieve our shared goal of timely and cost-effective relocations. Our Team delivers accurate and complete recordkeeping and timely posting of utility relocation data in the VDOT RUMS system.

**UTILITY CONFLICTS AND SOLUTIONS**

Building on VDOT’s preliminary utility information, our Team has identified and confirmed the following utility impacts, prior rights, and mitigation strategies. Considerable existing utility infrastructure exists along the Project crossroad corridors (Granby St, Little Creek Rd, and Tidewater Dr). Our Team has found that the typical/standard bridge pier footing and substructure requirements and standards conflict with the existing utility infrastructure.

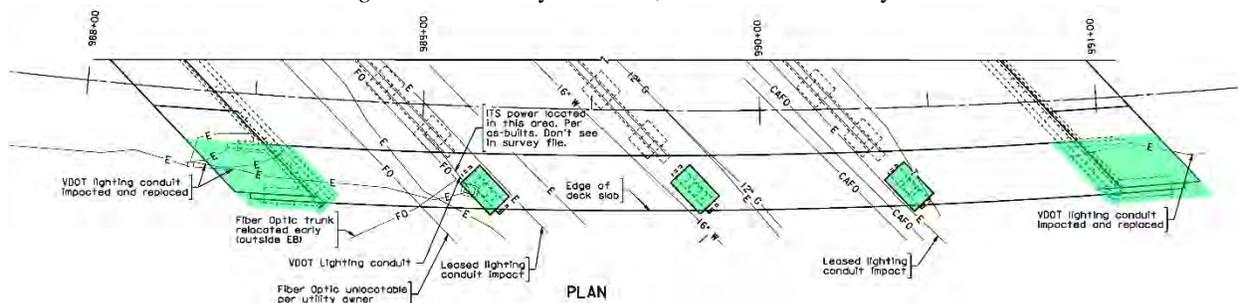
✓ *To expedite the construction timeline, avoid delays, and reduce construction cost, we have prepared special design footing and substructures to avoid or minimize utility conflicts at the Granby St, EB Tidewater Dr and WB Tidewater Dr bridge widenings.* Note that the I-564 and Little Creek Rd bridge widenings will be constructed with more conventional piles and footings. We break out and detail each of the critical utility impact areas below, as well as the impacts and mitigation strategies to reduce conflicts.

**I-64 EB over Granby St**

Due to the congested utility corridor along Granby St, the Team has designed narrower micropile supported pier footings which will reduce impacts during pile installation and provide a smaller excavation footprint for the footing. This enables us to avoid several utility relocations. Most utility conflicts at this location consist of VDOT ITS and lighting facilities which will be relocated prior to construction of the bridge piers and footings.

*\* Impacts to the existing 16-in water main have been reduced to eliminate direct conflict and allow the main to be supported and protected during pile/footing construction.*

Figure 4.2.2: Utility Conflicts, I-64 EB over Granby St



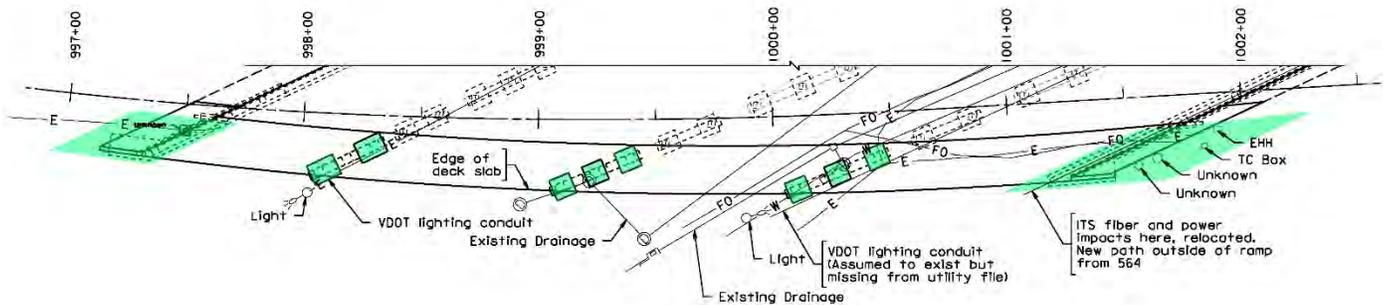
Utility Owner	Location	Description	Status	Mitigation Strategy
VDOT	SB Granby St, Abutment 1	Lighting conduit	Conflict	To be relocated as part of Project work
Qwest	SB Granby St, Pier 1 (TH182)	8” steel F.O. duct	Conflict	Duct and F.O. to be relocated by Qwest
VDOT	SB Granby St, Pier 1	Lighting conduit and pull box	Conflict	To be relocated as part of Project work
Dominion	SB Granby St, Pier 1 (TH183)	4” PVC Electrical conduit	Conflict	To be relocated as part of Project work
Dominion	SB Granby St, Pier 1 (TH184A)	Concrete Encased Electrical Duct Bank	No conflict	No action required
Dominion	SB Granby St, Pier 1 (TH184B)	Concrete Encased Electrical Duct Bank	No conflict	No action required

Utility Owner	Location	Description	Status	Mitigation Strategy
City of Norfolk DPU	Granby St, Pier 2 (TH 185)	16" D.I. water line	No conflict	Bridge foundations modified to support/protect water main during construction
Virginia Natural Gas	Granby St, Pier 2 (TH 187)	12" steel gas line	No conflict	No action required
Cox	NB Granby St, Pier 3 (TH 188)	F.O.	No conflict	No action required
VDOT	NB Granby St, Pier 3 (TH 189)	Lighting conduit	Conflict	To be relocated as part of Project work
Verizon	NB Granby St, Pier 3 (TH 190A)	Concrete encased duct bank	No conflict	No action required
Verizon	NB Granby St, Pier 3 (TH 190B)	Concrete encased duct bank	No conflict	No action required
Crown Castle	NB Granby St, Pier 3	UGFO	No conflict	Lift and lay existing line to align with trench box/pier footing
VDOT	NB Granby St, Abutment 2	Lighting conduit	Conflict	To be relocated as part of Project work

**I-64 EB over I-564**

Utility conflicts at this location consist of VDOT ITS and lighting facilities which will be relocated prior to construction of the bridge piers and footings.

Figure 4.2.4: Utility Conflicts, I-64 EB over I-564

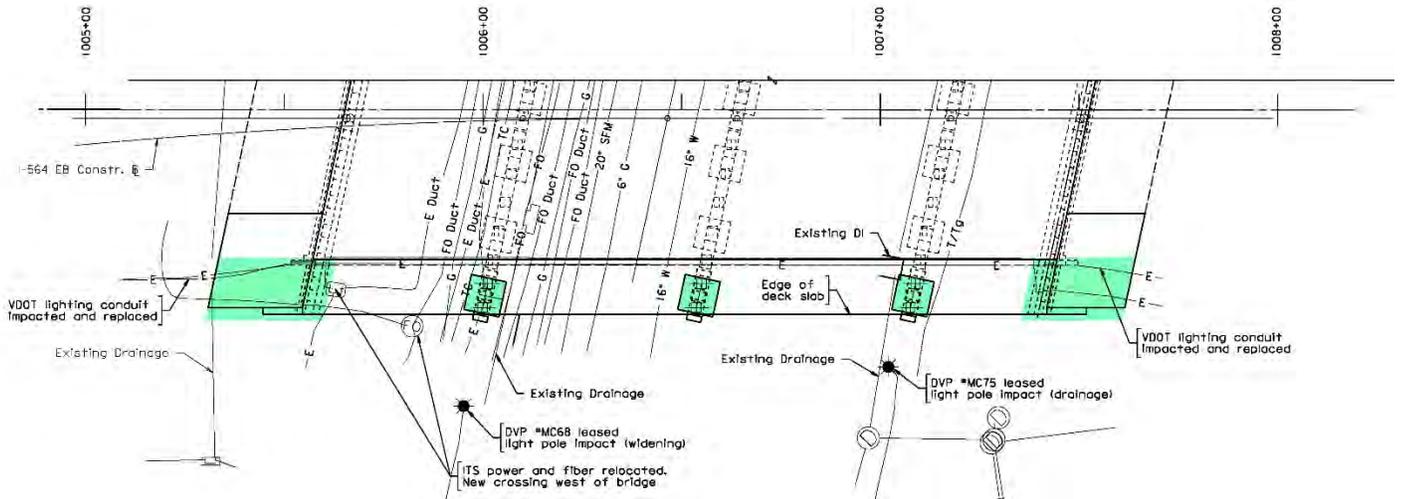


Utility Owner	Location	Description	Status	Mitigation Strategy
VDOT	Abutment 1	ITS/Lighting conduit	Conflict	To be relocated as part of Project work
VDOT	Pier 1	Lighting conduit	Conflict	To be relocated as part of Project work
VDOT	Pier 2	Storm drain & pipe	Conflict	Inlet to be relocated
City of Norfolk DPU	Pier 3	4" Water Main	No conflict	Line is abandoned, owner has no records of main
VDOT	Pier 3	Lighting conduit	Conflict	To be relocated as part of Project work
VDOT	Abutment 2	Lighting and ITS conduits (numerous)	Conflict	To be relocated as part of Project work

I-64 EB over Little Creek Rd

Because the utility corridor along Little Creek Rd is not as congested as other cross streets, the Team has designed more conventional pile supported pier footings. Note, however, that if we cannot design around certain utilities, they will require relocation.

Figure 4.2.3: Utility Conflicts, I-64 EB over Little Creek Rd



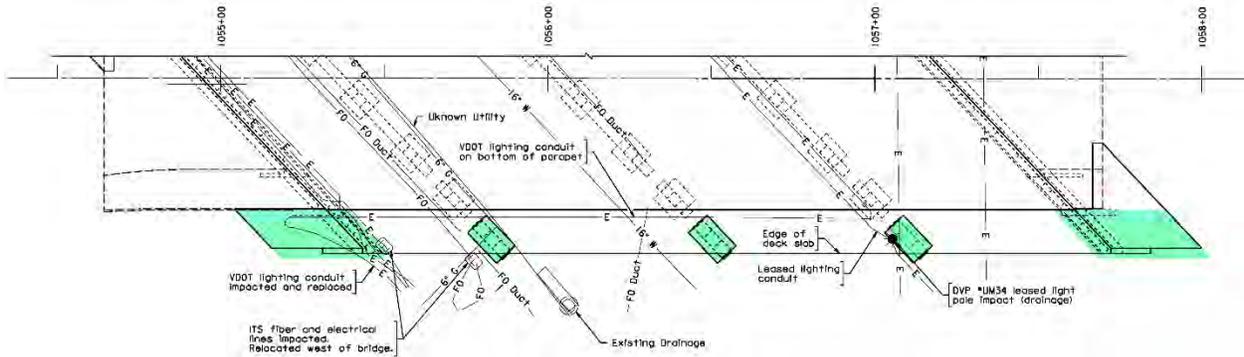
Utility Owner	Location	Description	Status	Mitigation Strategy
VDOT	WB Little Creek Rd, Abutment 1	Lighting conduit and pull box	Conflict	To be relocated as part of Project work
HRSD	WB Little Creek Rd, Pier 1 (TH 197)	20" D.I. sanitary force main	No conflict	No action required
City of Norfolk DPU	Little Creek Rd, Pier 2 (TH 199)	16" D.I. water line	No conflict	Water main to be protected during construction
Lumen	WB Little Creek Rd, Pier 1	UG along W.B. shoulder	No conflict	Lift and lay existing line to align with trench box/pier footing
Segra/Lumos	WB Little Creek Rd, Pier 1	Multiple UG lines along W.B. shoulder	No conflict	Lift and lay existing line to align with trench box/pier footing
Dominion	WB Little Creek Rd, Pier 1 (TH 191)	Electric	Conflict	To be relocated
Dominion	WB Little Creek Rd, Pier 1 (TH 192)	2" PVC Conduit	No conflict	Lift and lay existing line to align with trench box/pier footing
City of Norfolk	WB. Little Creek Rd, Pier 1 (TH 193)	4" Black Plastic Conduit, Traffic F.O.	No conflict	Lift and lay existing line to align with trench box/pier footing
City of Norfolk	WB Little Creek Rd, Pier 1 (TH 194)	Storm in the way of F.O. location?	No conflict	Lift and lay existing line to align with trench box/pier footing
Lumos	WB Little Creek Rd, Pier 1 (TH 195)	(2) 2" Innerduct conduit, F.O.	No conflict	Lift and lay existing line to align with trench box/pier footing
Virginia Natural Gas	WB Little Creek Rd, Pier 1 (TH 196)	12" steel gas line	No conflict	Protect in place during construction
HRSD	WB. Little Creek Rd, Pier 1 (TH 197)	20" D.I. sanitary force main	No conflict	No action required
Virginia Natural Gas	WB. Little Creek Rd, Pier 1 (TH 198)	6" HDPE gas line	No conflict	No action required
City of Norfolk DPU	Little Creek Rd, Pier 2 (TH 199)	16" D.I. water line	No conflict	Bridge foundations have been modified to allow water main to be protected during construction
Verizon	EB. Little Creek Rd, Pier 3 (TH 200)	Telephone	No conflict	Protect in place during construction
VDOT	EB Little Creek Rd Abutment 2	Lighting conduit	Conflict	To be relocated as part of Project work

**I-64 EB over Tidewater Dr**

Due to the congested utility corridor along the southern limits of Tidewater Dr, the Team has designed narrower micropile-supported pier footings, which reduces impacts to overhead and buried utilities during pile installation and provides a smaller excavation footprint for the footing. This enables us to avoid several utility relocations.

*\* Impacts to the existing 16-in water main have been eliminated by the proposed pile and footing construction methods and there is no impact to the existing water main.*

Figure 4.2.3: Utility Conflicts, I-64 EB over Tidewater Dr

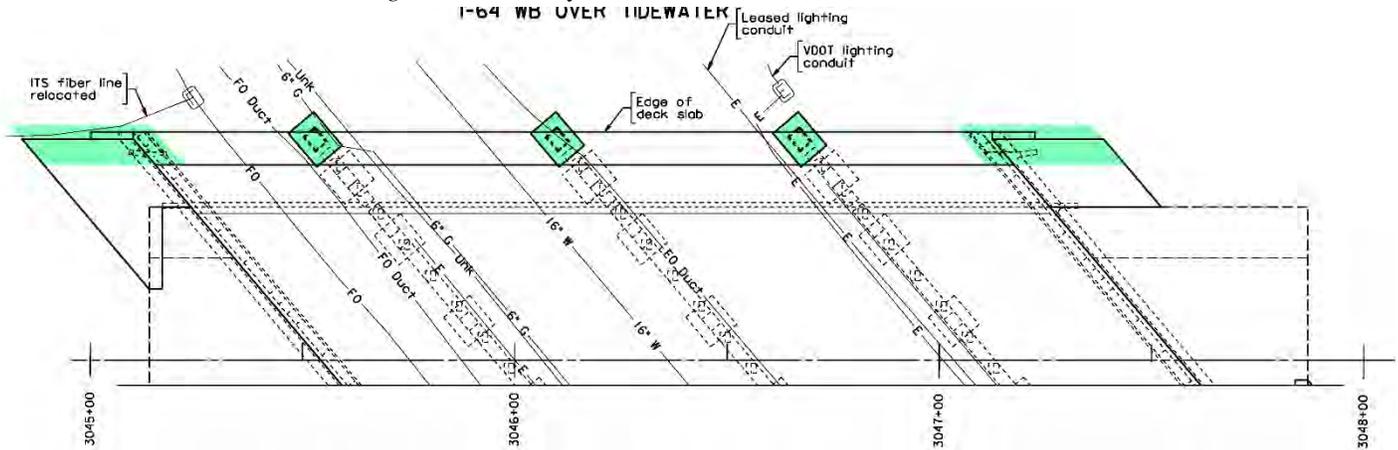


Utility Owner	Location	Description	Status	Mitigation Strategy
VDOT	I-64 EB over SB Tidewater Dr, Abutment 1	Lighting conduit	Conflict	To be relocated as part of Project work
Level 3/Century Link/Lumen	I-64 EB over SB Tidewater Dr, Pier 1 (TH 3)	(3) 1.5" HPDE innerducts, F.O.	No conflict	No action required
Virginia Natural Gas	I-64 EB over SB Tidewater Dr, Pier 1 (TH 6)	6" HDPE gas line	Conflict	Gas line to be relocated
Unknown	I-64 EB over SB Tidewater Dr, Pier 1 (TH 6)	(3) 2.5" Conduits, (5) cables	No conflict	Lift and lay existing line to align with trench box/pier footing
City of Norfolk DPU	I-64 EB over Tidewater Dr, Pier 2 (TH 9)	16" D.I. water line	No conflict	Bridge foundations have been modified to eliminate impacts to water main
Verizon	I-64 EB over Tidewater Dr, Pier 2 (TH 12)	(2) 2" Conduits, F.O.	Conflict	Lines to be relocated
VDOT	I-64 EB over Tidewater Dr, Pier 3	Lighting and lighting electrical	Conflict	To be relocated as part of Project work
Dominion	I-64 EB over Tidewater Dr, Pier 3	O.H. Elec. Transmission	No conflict	Bridge foundations have been modified to utilize micropiles to reduce impacts/maximize clearances to O.H. electric transmission lines

**I-64 WB over Tidewater Dr**

Due to the congested utility corridor along the southern limits of Tidewater Dr, the Team has designed narrower micropile-supported pier footings which reduces impacts to overhead and underground utilities during pile installation and provides a smaller excavation footprint for the footing. This enables us to avoid several utility relocations as described below.

Figure 4.2.4: Utility Conflicts, I-64 WB over Tidewater Dr



Utility Owner	Location	Description	Status	Mitigation Strategy
VDOT	I-64 WB over SB Tidewater Dr, Abutment 1	ITS F.O.	Conflict	To be relocated as part of Project work
Level 3/Century Link/Lumen	I-64 WB over SB Tidewater Dr, Pier 1 (TH 1)	(4) 1.5" HPDE innerducts, F.O	No conflict	Lift and lay existing line to align with trench box/pier footing
Virginia Natural Gas	I-64 WB over SB Tidewater Dr, Pier 1 (TH 4)	6" wrapped steel gas line	Conflict	Gas line to be relocated
City of Norfolk DPU	I-64 WB over Tidewater Dr, Pier 2 (TH 7)	16" D.I. water line	No conflict	Bridge foundations modified to eliminate impacts to water main
Verizon	I-64 WB over Tidewater Dr, Pier 2 (TH 10)	(2) 2" Conduits, F.O.	No conflict	Lift and lay existing lines to align with trench box/pier footing

**Mainline Crossings**

The existing utilities that cross the mainline alignment, loops, and ramps are not in conflict with any of the proposed roadway and bridge improvements.

Figure 4.2.5: Utility Conflicts, Mainline Crossings

Utility Owner	Location	Description	Status	Mitigation Strategy
City of Norfolk DPU	Sta 1006+30 – 1006+57, right, E side of Little Creek	8" sanitary sewer	No conflict	No action required
City of Norfolk DPU	Sta 1025+74, Perp. Crossing	6" waterline	No conflict	No action required
City of Norfolk DPU	Sta 1026+20, Perp. Crossing	8" sanitary sewer	No conflict	No action required
City of Norfolk DPU	Sta 1045+50 – 1049+19, left, northwest quadrant of I-64/Tidewater	10" sanitary force main	No conflict	No action required
City of Norfolk DPU	Sta 1046+19 to 1048+98, left, northwest quadrant of I-64/Tidewater	8" sanitary force main	No conflict	No action required
City of Norfolk DPU	Sta 1027+00 to 1042+00 Rte.	8" sanitary sewer	No conflict	No action required
City of Norfolk	Loop A & Ramp A	8" force main	No conflict	No action required

**Potential Conflicts with Drainage**

Relocation of existing storm drainage facilities impacted by the bridge widening will be coordinated with the private and public utility relocations identified above to avoid creating any new utility conflicts.

**Potential Conflicts with ITS and Lighting**

As noted in the RFP, Miss Utility will not locate VDOT roadway lighting and ITS/tolling utilities. The Design-Builder is responsible for locating and marking these utilities. In performing this work, we compare with available

survey utility information, as-built plans, and field reconnaissance with VDOT and their maintenance contractors to ensure all VDOT utilities are identified. From our review of the RFP information, we have identified numerous VDOT utility conflicts with roadway, structure, and drainage construction, including utilities within existing shoulders that are converted to travel lanes; utilities impacted by roadway widening, grading, guardrail installation, and retaining/sound walls; and utilities attached to bridge abutments and bridge girders or under proposed piers on widened bridges. Our proposed roadway lighting and ITS/tolling designs account for relocation to remedy all these conflicts. To ensure VDOT systems are kept operational per the RFP, we anticipate performing the relocations prior to impacting existing systems or, when necessary, providing temporary connections.

#### SCHEDULE MITIGATION STRATEGIES

**Jon Mountenay** (Schedule Manager) and **Dan Seli** (Utility Design) verify utility conflicts and work closely with the roadway, bridge, and drainage designers to solve them through design modifications and/or construction methods/sequencing. As noted above, our Team has already incorporated significant evaluation of the bridge foundations' design elements to reduce or eliminate utility conflicts. Whenever additional design information becomes available, potential utility conflict assessments will be performed and evaluated for potential conflict.

The design Team will continue to investigate potential changes to the bridge foundations to further reduce utility impacts. They will closely coordinate the design of underground foundations as well as drainage relocations and improvements to avoid creating additional conflicts. A specific example of design revisions already implemented by the Team is the use of micropile foundations which have a smaller overall foundation footprint and reduces impacts during installation and decreases the foundation size, further reducing utility impacts.

**Chris Mansfield** (Construction Utility Coordinator) and **Dan Seli** will continue to coordinate with the utility owners to consider any practicable alternatives to relocation, such as protect-in-place and lift-and-lay.

Our Team performs early field inspection of all existing visible utilities to determine their conditions. This enables the design and construction Teams to develop the most appropriate means and methods for relocation or temporary support. Specific examples include supplemental utility test holes on the existing duct banks to determine actual widths and heights at the bridge piers.

Each identified utility conflict has been accounted for in estimating the cost and time required for relocating the utility. In developing the RFP Plans, potential conflicts were reviewed with design and construction personnel to determine where the design could be tailored to avoid or minimize conflicts. To expedite utility relocations, our Team assists utility companies with any work we can perform cost effectively, including clearing and/or grubbing efforts; RW and easement stakeout; traffic control; construction of access road and laydown areas; and installation of conduits, encasement pipes, and pull boxes. We coordinate with utility companies to perform relocation work (e.g., manhole/handhole construction, trenching, etc.) to further expedite the schedule. Our partnership saves them the time and expense of hiring outside contractors and reduces our own schedule risk.

Our Team communicates frequently with utility companies to ensure they stay on schedule and afford us time to adjust operation sequencing. Chris monitors progress with each utility owner using a tracking matrix, which he updates bi-weekly and provides to the DBPM, DM, CM, and VDOT. The matrix includes all utility milestones to facilitate design and relocation on a regimented schedule. The most significant milestone for utility companies is submission of Plan & Estimates as well as any required easements required for relocation.

A Utility Task Force comprised of Chris, Dan, and **Richard Bennett** (Utility Coordinator) streamlines the management, review, and approval of P&Es and easement requests. The task force capitalizes on prior success with facility owners to proactively identify and prevent potential delays. The Myers Team's long-term working relationships with the owners have built a unique level of trust and understanding that makes the entire relocation process smoother and more efficient. During construction, the task force assists the utility company's contractor with executing relocation work and resolving issues before they become critical and potentially affect the Project schedule. To maintain the schedule, the task force also flags potential issues with relocations exceeding the UFI schedule, identifies mitigation measures, and implements remediation measures. Our Team partners with the utility companies and VDOT regarding any delay or lack of progress and assists in defining recovery strategies.

Per standard VDOT utility practice, our Team monitors and reports on the progress and timing of utility relocation construction until the work is completed.

### Schedule Integration

The Team has developed an integrated schedule management approach for the coordination, design, and relocation of utilities to expedite utility relocation work and prioritize critical utility design and relocation activities. Proposed schedules are coordinated with the utility owners and relocation schedules are phased to avoid impacting the overall Project schedule. Clearing and grubbing, MOT, and Project access can be provided to the utility owner to facilitate relocation schedules. Utility design and relocation schedule activities are part of the Project schedule included in the Section 4.6. It is important to note that utility relocations are not currently on the Project critical path and as utility impacts are at the existing cross-roads, relocation of these utility will be planned as part of bridge foundation construction activities.

## 4.4.3 GEOTECHNICAL

### OUR EXPERIENCED, LOCAL GEOTECHNICAL TEAM

Our Geotechnical Design Team, led by **Monica Paylor, PE**, (Geotechnical Engineering) has reviewed the Project's Geotechnical Data Report (GDR) dated March 4, 2022, and will base geotechnical design and analysis recommendations on the described subsurface conditions and our previous experience in the Project region. *Monica applies more than 31 years of experience providing geotechnical design and construction recommendations on numerous VDOT projects.* She leads all geotechnical evaluations and design analyses of foundations, pavements, embankments, slopes, culverts, pavements, retaining walls, minor structures, and stormwater management. Monica and her staff provide construction observations and responds swiftly to construction issues.

### APPROACH TO IDENTIFYING GEOTECHNICAL RISKS

The Project site is in the Coastal Plain Physiographic Province, characterized by unconsolidated marine and fluvial sediments. Materials encountered here vary from sands and gravels to clays, silts, and sands. Fill soils from original construction of the I-64 roadway exist to various depths throughout the Project. The Project widens an existing roadway alignment, which in turn requires widening of five existing bridges, sliver slope fills, new retaining walls and sound barriers, and modifications to existing retaining walls and sound barriers. The existing roadway embankments overlay compressible soils that extend to depths of up to approximately 40 ft. These new structures and new embankment loadings will result in settlements that require mitigation methods to meet the geotechnical performance requirements presented in RFP Part 2, Section 2.6.2. Our supplemental subsurface investigation program will identify these risks. *Figure 4.3.1* provides our recommended mitigation methods, to be completed in the final GDR when we conduct the design level subsurface investigation.

✓ The geotechnical information in the GDR provided with the RFP includes new and historic borings, CPT Soundings, Dilatometer tests, and laboratory test data. *We used this information to develop a preliminary understanding of the soil properties, predict settlements, and determine areas where we need additional subsurface information.* To further identify risks, our Team performs a design-level geotechnical investigation which supplements the RFP's substantial geotechnical and pavement data. We meet or exceed the geotechnical data requirements provided in Chapter 3 of the VDOT Materials Division's Manual of Instructions (MOI); the current AASHTO LRFD Bridge Design Specifications, 8<sup>th</sup> Edition, 2017 and VDOT Modifications; and Section 700.05 (c) of the 2020 VDOT Road and Bridge Specifications.

The RFP-provided GDR has also enabled our Team to target specific areas of geotechnical concern with additional borings and supplemental in-situ testing consisting of Flat Plate Dilatometer Testing (DMT) and Cone Penetrometer Testing (CPT). These include areas where potentially soft subgrade, high groundwater, or soft/compressible soils in proposed fill exist, specifically at proposed widenings at bridge approaches and along retaining walls where total (short- and long-term) and differential settlement must be evaluated. Our experience has proven the benefits of in-situ testing for measuring soil parameters needed to evaluate resistances of deep foundations, slope stability, and settlement. We also perform laboratory testing on high-quality samples to better define the strength and compressibility parameters of the site soils. Design soil parameters are established in

accordance with Chapter 3 of MOI, AASHTO LRFD, and Duncan, J.M. (April 2000) Factors of Safety and Reliability in Geotechnical Engineering, Journal of Geotechnical and Geo-environmental Engineering, ASCE, 2001 to evaluate variability of subsurface conditions, reliability, and minimum factors of safety.

Our supplemental subsurface investigations will identify areas where risks exist. The data obtained provides adequate subsurface information to design appropriate mitigation strategies. Early in these investigations, we coordinate with the design and construction schedule, and perform work in areas of proposed fill, approach embankments, bridges, and retaining wall explorations to better identify areas that may have short- or long-term settlement impacts. This provides the information needed to design our proposed mitigation strategies so that they meet or exceed the requirements of the RFP without impacting the Project schedule.

**APPROACH TO MITIGATING GEOTECHNICAL RISKS**

Our Team’s review of the subsurface data has produced the following anticipated geotechnical risks/hazards related to construction cost/schedule, and our proposed methods to effectively mitigate and manage these risks:

Figure 4.3.1: Anticipated Geotechnical Risks, Impacts, and Mitigation Strategies

Geotechnical Risk/Hazard	Description of Potential Impacts	Proposed Mitigation Strategies Considered
Unsuitable subgrade soils/ high groundwater conditions identified at: <ul style="list-style-type: none"> <li>• 1014+00 – 1024+00</li> <li>• 3011+00 – 3015+00</li> <li>• 1070+00 – 1074+00</li> </ul> Approaches to I-64 EB over Little Creek Rd: <ul style="list-style-type: none"> <li>• 1007+43 – 1011+49</li> </ul>	Unknown or unsuitable ground conditions causing design and construction delays	<ul style="list-style-type: none"> <li>• Supplemental subsurface investigation with additional investigations in areas where impacts of unsuitable soils/high groundwater have greatest risk of impacting design/construction if not identified</li> <li>• Monitor groundwater with piezometers</li> <li>• Excavate and replace to a maximum depth of 3 feet below subgrade with suitable/free draining material to improve subgrade conditions</li> </ul>
Construction in the vicinity of existing structures identified at: <ul style="list-style-type: none"> <li>• Five proposed bridge widenings</li> </ul>	Damage due to excessive or unanticipated ground movements or vibrations	<ul style="list-style-type: none"> <li>• Review existing structures</li> <li>• Identify structure/ utilities/ pavement that are at risk.</li> <li>• Determine need for preconstruction condition surveys</li> <li>• Use non-displacement piles in areas where vibrations need to be minimized or predrill prestressed concrete piles to minimize vibrations</li> <li>• Develop instrumentation (settlement plates, seismographs, tiltmeters, survey monitoring points) and monitoring program with appropriate alert levels at minimum, monitor existing structures per RFP</li> </ul>
Challenges with construction access for foundations due to overhead utilities or existing structures identified at: <ul style="list-style-type: none"> <li>• I-64 EB over Tidewater Dr</li> </ul>	Construction delays or potential damage to existing structures/ utilities/ pavement	<ul style="list-style-type: none"> <li>• Construct micropile foundations using smaller equipment and ability to install foundations in low overhead spaces</li> <li>• Micropiles will minimize vibrations/impacts on existing buried utilities and can be installed on a batter to maximize lateral load resistance</li> <li>• Double steel casings may be used to account for potential corrosion loss and increase lateral stability</li> </ul>
Protection of existing underground utilities required at: <ul style="list-style-type: none"> <li>• I-64 EB over Granby St</li> <li>• I-64 WB over Tidewater Dr</li> </ul>	Potential damage of existing utilities due to vibrations	<ul style="list-style-type: none"> <li>• Use micropile foundations to minimize vibrations and allow for a smaller foundation footprint</li> </ul>
Slope instability from modification of existing slopes	Slope failures and potential surface water infiltration causing slip planes, surface water causing erosion of embankment slopes and construction delays, potential safety impacts to travel lanes	<ul style="list-style-type: none"> <li>• Minimize disturbance to existing slopes</li> <li>• Follow erosion and sediment control procedures</li> <li>• Limit amount of water discharged over the top of unvegetated slopes and vegetate slopes quickly</li> <li>• Temporary pipes or channels to control the flow of surface water</li> </ul>
Excessive movement/settlement of embankment or fill loading along proposed bridge approach fills and retaining walls	Long-term maintenance and repair or potential retrofit required, computed total settlement of fills greater than 5’ generally cause anticipated immediate- and long-term settlements exceeding that required to mobilize downdrag forces on existing and proposed piles, potential bending of existing	<ul style="list-style-type: none"> <li>• Use lightweight fill (glass aggregate, lightweight aggregate or foamed concrete fill) to reduce fill loadings and settlement to ranges that do not impact piles</li> <li>• Load balancing (remove existing material and replace with lightweight fill to maintain existing loadings while increasing fill height) is considered in the vicinity of the Little Creek structures to eliminate settlement due to the presence of up to 15’ of soft, compressible soils</li> </ul>

Geotechnical Risk/Hazard	Description of Potential Impacts	Proposed Mitigation Strategies Considered
	battered piles, settlement/movement of structures	<ul style="list-style-type: none"> <li>• Geotechnical instrumentation with appropriate alerts and pre-set actions to take if alert levels are reached</li> <li>• Recommend MSE retaining walls and design the joint width for anticipated differential settlement to occur during construction.</li> </ul>
Long-term settlement of bridge foundations at the five proposed bridge widenings	Long-term maintenance and repair potential due to settlement of soft layer that extends well below ground surface	<ul style="list-style-type: none"> <li>• Provide minimum tip elevations that are below soft layers that extend to EL -40 ft to EL - 45 ft at these structures</li> <li>• Extending below soft layers makes pile lengths comparable to existing pile lengths</li> </ul>

Our Team has successfully used subsurface investigations to identify risks and apply mitigation measures like those listed above to address geotechnical challenges in similar geologic conditions, including the VDOT Route 173 (Denbigh Blvd) over CST and I-64 and Newport News Atkinson Blvd over CSXT RR and I-64 projects.

**APPROACH TO VERIFYING METHODS OF MITIGATING GEOTECHNICAL RISKS**

We design the Geotechnical Instrumentation Program to monitor anticipated movement and verify that mitigation strategies are performing as intended. We develop review and alert levels that meet or exceed RFP requirements with defined action items to be performed if these values are approached or exceeded. Our goal is to monitor the effectiveness of the implemented mitigation strategies and minimize geotechnical risks that can impact construction cost, time, and Project safety. We place instrumentation/monitoring points at the maximum spacings provided in the RFP. We develop review and alert levels to limit potential downdrag loads at abutments and to meet or exceed the requirements allowed in the RFP and AASHTO LRFD design recommendations. *Figure 4.3.2* provides our anticipated action plan if review or alert levels are exceeded.

*Figure 4.3.2: Instrumentation Action Response Plan*

Response Level	Criteria	Action
Normal	Movements are below review values	<ul style="list-style-type: none"> <li>• No action needed</li> <li>• Continue monitoring at predetermined frequency</li> </ul>
Review	Measured movements exceed pre-established review level	<ul style="list-style-type: none"> <li>• Review validity of movement</li> <li>• Monitor movement at increased frequency or readings</li> <li>• Slow construction</li> <li>• Implement Geotechnical Lead’s recommendations</li> </ul>
Alert	Measured movements exceed alert level	<ul style="list-style-type: none"> <li>• Stop work and immediately Notify Geotechnical Lead</li> <li>• Continue instrumentation monitoring at increased frequency</li> <li>• Implement contingency plans (redesign, ground improvement, pre-drill piles, change pile type)</li> </ul>

**4.4.4 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)**

To minimize VDOT’s oversight and review and keep our Quality Management Team focused on long-term asset performance and Project durability (as opposed to profitability or schedule impacts), the Myers Quality Assurance (QA) and Quality Control (QC) approach empowers all Project staff with proven, transparent, and collaborative relationships, systems, and standards of excellence. VDOT’s chief obligation is to assist our Team in reviewing and addressing any quality concerns during monthly progress meetings. The following narrative reflects how our planning, process, and people will minimize such issues and keep these meetings efficient.

**Richard Allen** (QAM) applies 27 years of experience in his oversight of all quality efforts which will include development and Project-long maintenance of the I-64 1A QA/QC Plan (QA/QC Plan). The QA/QC Plan defines our Team’s process approach to design and construction quality management, procedures, record keeping, and document control. We base this document on *VDOT’s Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects, July 2018* (VDOT QA/QC Manual).

**INDEPENDENT QUALITY ASSURANCE**

The Myers Team’s QA Program ensures that staff at all levels of the design and construction Team understand, implement, monitor, and document quality procedures. The QA portion of our QA/QC Plan:

- Provides clear provisions for identifying, tracking, and resolving potential non-conforming work, materials, or equipment (NCRs) and administering a QA auditing and recovery (AR) plan.

- Clearly stipulates that Richard does not report to production personnel, has the authority to stop work, and will communicate daily with VDOT, **Jeff Snow** (CM), **Michael Johnson** (QCM), and lead quality inspectors.
- Details preparatory meetings that Richard directs to ensure that all submittals, certifications, and requirements necessary to begin a construction are completed and in place before construction begins.
- Provides a communications framework between Richard and VDOT IA/IV staff to track NCR resolutions, audit AR plans, and monitor assembly of the materials notebook.

The QA/QC Plan further defines the roles and relationships between VDOT, Richard, and our three key Project leaders—**Ed Hilferty** (DBPM), **Tom Heil, PE** (EEIC), and **John Maddox, PE** (DM)—within the QA framework. During design, Richard conducts formal meetings with Ed, Tom, and John at least bi-weekly to implement and document all policies and procedures. During construction, Richard and his QA staff work closely with Jeff, Michael, and the construction QC Team to ensure quality, follow construction testing and inspection requirements, and verify the accuracy/completeness of QC results documentation. Along with the Lead QA Inspector, Richard ensures adherence to environmental permits and commitments, and verifies that all work and materials, testing and sampling, and work zones comply with the contract and approved-for-construction (AFC) documents. The QA Team confirms construction compliance with the applicable standards/specifications and frequency of testing (FOT) requirements and conducts proper QA inspection and testing to confirm the results of the QC program.

Before each preparatory meeting, Richard provides established processes to approve C-25 submissions, maintain the materials notebook, track FOT requirements, and document deficiencies and non-conformance.

**Joe Felton** (ECM) joins Richard to oversee and administer the Project's EMP. Together, they verify that the AFC construction documents include all commitments within the EMP and that all construction follows these commitments. Richard leads QA inspection staff, with support from Joe, in administering the EMP in the QA process with required periodic inspections, field visits, and oversight from regulatory agency representatives.

#### ENSURING DESIGN QUALITY

Our design efforts begin by developing the DQMP, which VDOT reviews between NTP and the Project kickoff meeting. Our approach to developing the DQMP mirrors all our design efforts—a collaborative, multi-level process that minimizes the need for VDOT oversight and review. John leads weekly design meetings attended by Ed, **Jon Holt** (Deputy DBPM), Tom, lead engineers, Jeff Snow, **Gail Kuttesch** (Deputy DM) and Richard.

✓ *Final submittals also receive three levels of accountability.* First, John verifies that all parts of the final plans follow all DQMP procedures. Second, Tom confirms. Third, Ed and Richard sign off prior to VDOT's final review and acceptance. We invite VDOT and key stakeholders to participate in over-the-shoulder reviews (OTSRs) to streamline the review process by citing and offering clarifications in the AFC documents. John will also perform quarterly audits to verify conformance with the approved Design QA/QC Plan and confirm that the Team is performing required checking and review functions along with the DQMP.

All members of the design QA/QC Team commit to quality designs and AFC construction documents in accordance with VDOT's QA/QC Manual and the QA/QC Plan. They minimize demands on VDOT by:

- Designing features that are safe and meet or exceed VDOT regulations and design criteria and manuals
- Conforming to all RFP standards and reference documents
- Designing elements that are constructible, durable, economical, and minimize maintenance
- Providing an organized and indexed set of design calculations, criteria, and assumptions

John will also ensure all design plan revisions for Notice of Design Changes and Field Design Changes follow the approved Design QA/QC Plan and are fully coordinated with the DBPM, CM, and QAM for VDOT final review and acceptance. The proposed changes will be in accordance with all RFP requirements.

To ensure well-structured, easily audited design compliance, we complete and electronically submit all documents, forms, and certifications with each design submission to digitally track drawing review certifications, calculation review certifications, and the release for deliverable plans.

## DELIVERING QUALITY THROUGHOUT CONSTRUCTION

During construction, Richard and his QA staff coordinate daily with Jeff, Michael, and the construction QC Team to implement the CQMP, which we update with each AFC work package to include staffing plan, inspection plan, testing plan, and construction inspection checklists. Construction QC staff use set procedures for inspection, testing, reporting, materials documentation, diaries/checklists, safety, and environmental monitoring. This ensures that construction requires minimum intervention from VDOT.

✓ *We promote transparency, independence, and inclusion among the construction Team, QAM, QC staff, QA staff, safety manager, and field managers by opening review to all.* Operations begin only when the plans integrate quality- and safety-related tasks. Our Team separates QA and QC while engaging the QAM in review of all QC inspections.

QA and QC play an integral role in each construction Work Package. QA/QC staff contribute to construction planning and monitoring, including weekly short-term scheduling. Beginning with the preliminary baseline schedule, our Team plans the scope and resources that the quality staff needs to implement the CQMP. Construction work plans developed for all crews and subcontractors specify inspection and testing requirements as well as witness and hold points. All planning evolves alongside design and construction with regular updates:

**Monthly:** Update the CPM schedule with actual progress and activity schedules for the remainder of the contract.

**Weekly:** Five-week look-ahead schedules depict each crew and subcontractor's performance, including a detailed schedule for the upcoming week. The CM, QCM, QAM and senior QA and QC inspectors meet to assign inspection staff for upcoming work and address any compliance issues or concerns.

**Daily:** Update daily schedule to confirm crews' precise daily tasks.

QA and QC staff act in each of these planning activities to collaboratively incorporate feedback on potential issues/concerns. Following CQMP approval, Ed and Jeff meet with Michael to begin QC planning efforts. Michael works closely with the QA and QC staff to develop the FOT requirements and convey them to the quality Team. He meets with superintendents and field managers to accurately align the FOT with the production planned for that day so production can move forward while respecting all QA and QC hold points. QC inspectors and testers observe daily construction practices, perform inspections and testing in accordance with the FOT requirements, ensure materials meet the contract provisions, and, if needed, ask field personnel to slow down production to accommodate testing requirements and approvals.

Within two weeks prior to the start of work, Michael conducts a Preparatory Inspection Meeting with construction staff and the Department, including the NPDES Coordinator and ECI, to verify that preconstruction approvals are complete and inspections/testing requirements are properly identified and scheduled. Following the meeting, Michael prepares meeting minutes for review and approval by the Department and amended to the CQMP. Should any issues with nonconforming work arise during construction, the QA/QC plan will specify mechanisms to address and report nonconforming (NCR) workmanship, materials, and/or equipment, as well as auditing and recovery plans (AR) to control and repair deficient items.

All our Team members, including QA/QC staff, superintendents, field managers, subcontractors, and field engineers will have access to ProjectWise, a single, centralized cloud location for managing and collaborating on Project documents. By having one set of approved construction plans that all construction and quality personnel can view simultaneously, we avoid any situation in which a representative is working from a different set of plans.

**QA AND QC STAFFING LEVELS**

Routine, transparent QA/QC communications between Richard and our senior staff in design and construction ensure that we will commit the right resources needed to realize the QA/QC Plan. Richard works with Michael to ensure that staffing meets the requirements of the CQMP and the FOT. QA/QC staffing varies as the Project progresses from clearing/grubbing to grading, drainage, roadway, and structure construction, and the independent QA/QC laboratories support additional key senior QA and QC inspectors and inspectors/testers.

Figure 4.4.1 reflects the general staffing levels we anticipate for each role based on our current understanding of the scope of work and the Project schedule. Construction activities will dictate the exact number of staff needed during any activity, and we will supply additional staff when needed to enforce the requirements of the QA/QC Plan.

Figure 4.4.1: QA/QC Roles and Responsibilities

Quality Professional	Personnel Committed
<b>QAM</b> Richard Allen	1 full-time
<b>Lead QA Inspectors</b> Joseph Wenger, PE (structures) Cory Fout (roadway)	2 full-time
<b>QA Inspectors /Testers</b>	2 full-time 2 part-time
<b>Construction QC Manager</b> Michael Johnson	1 full-time
<b>QC Inspectors / Testers</b>	4 full-time 4 part-time

# 4.5 CONSTRUCTION OF PROJECT



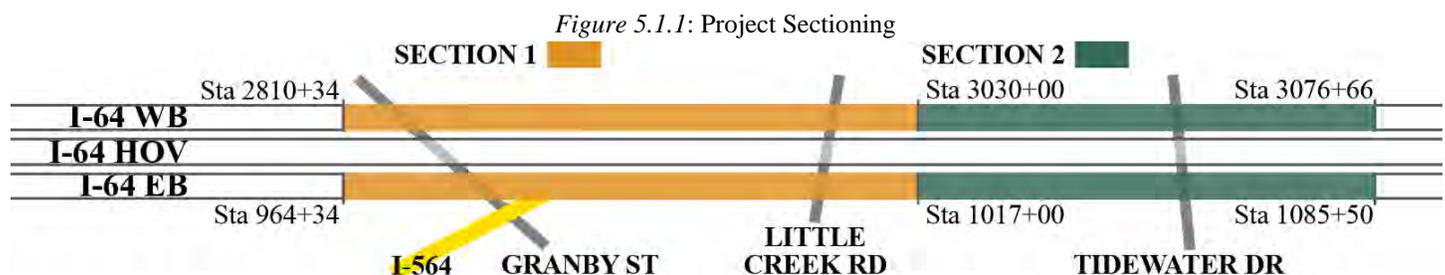
4.5.1 SEQUENCE OF CONSTRUCTION

APPROACH TO CONSTRUCTION PHASING

✔ *To expedite construction and reduce the duration of construction impacts, our Team’s phasing independently focuses on I-64 EB, I-64 WB, and the I-64 reversible managed lane. A three-phase approach (Preconstruction, Phase 1, Phase 2) completes the I-64 EB and I-64 WB sections, while we deliver the new managed lanes section early in Phase 1.* Our sequence of construction and schedule expedites conversion of the managed lanes section to its final dedicated WB and reversible lane section by June 19, 2024. This allows for operational use of these lanes early in the construction process and will provide traffic relief in each direction, including permitting our ATC #1 implementation. In addition, our sequence will have the I-64 EB lanes open for use by October 21, 2025. Our Team performed traffic analysis meeting the TOSAM requirements to determine how to best maintain traffic movements throughout construction and maintain the required lanes on each bridge. As a result, we developed ATC #1 to assist with traffic, safety, and construction efficiency while accelerating Project completion. ATC #1 minimizes the number of individual lane closures and eliminates the need for steel plates. In addition, ATC #2 mitigates the deep excavation near median barriers and walls that could lead to possible barrier replacement. ATC #2 helps accelerate the schedule with faster and simpler means and methods that result in a lower impact to the existing barriers and walls.

The Preconstruction Phase begins with upgrading the shoulder in specific locations for future use. *Figures 5.A and 5.B* (see pages 35-36) illustrate our phasing approach once shoulder strengthening is complete. Phase 1 follows and includes outside widening of I-64 EB, I-64 WB, and I-64 reversible managed lane conversion, including outside retaining wall construction (Walls 4, 5, 6, 7, 10A/B, 11, 12, 3A/B/C), roadway widening, bridge rehabilitation, and pavement reconstruction while maintaining the required number of general-purpose lanes in each roadway section. Phase 2 moves to the inside shoulder reconstruction, drainage installation, median wall construction (Walls 2A, 2B, 8, 9) and very high early latex overlay placement. In this Phase, we also maintain the required general-purpose lanes in each roadway section throughout the Project.

✔ *To allow maximum flexibility in construction sequencing, we divided I-64 EB and I-64 WB into two sections, which ties together multiple elements of work linked by our MOT plan. This permits progress from Phase 1 to Phase 2 to proceed within a section and not constrain switching traffic until the entire roadway section is complete.* To achieve this schedule acceleration, we will use interim phase minor traffic shifts to sequence the work. For example, we can switch to Phase 2 in I-64 EB Section 2 before completing Phase 1 in I-64 EB Section 1. Logical stationing splits each corridor, as depicted in *Figure 5.1.1*:



A key point in our schedule is the implementation of ATC #1 which uses the new dedicated WB managed lane temporarily as the second I-64 general purpose through lane during construction. To reach this milestone, we need to complete the reversible section in its new configuration with a dedicated I-64 WB and reversible lane. Once ATC #1 is implemented, we can begin Section 1 of the I-64 WB roadway. This traffic configuration allows a complete closure of the outside of both I-64 WB bridges over Little Creek Rd and Granby St.

✔ *As construction progresses in each area of the Project, the section plan permits completed areas to transition to Phase 2 independently, as illustrated in the Project Schedule (see Section 4.6).* As each section reaches completion of Phase 2, we will perform the milling, hydro-demolition, and very high early latex pavement utilizing nighttime and weekend hours as permitted in MOT Section 2.10.3.

Figure 5.A (Map): Phasing Approach, Northern/West Project Area

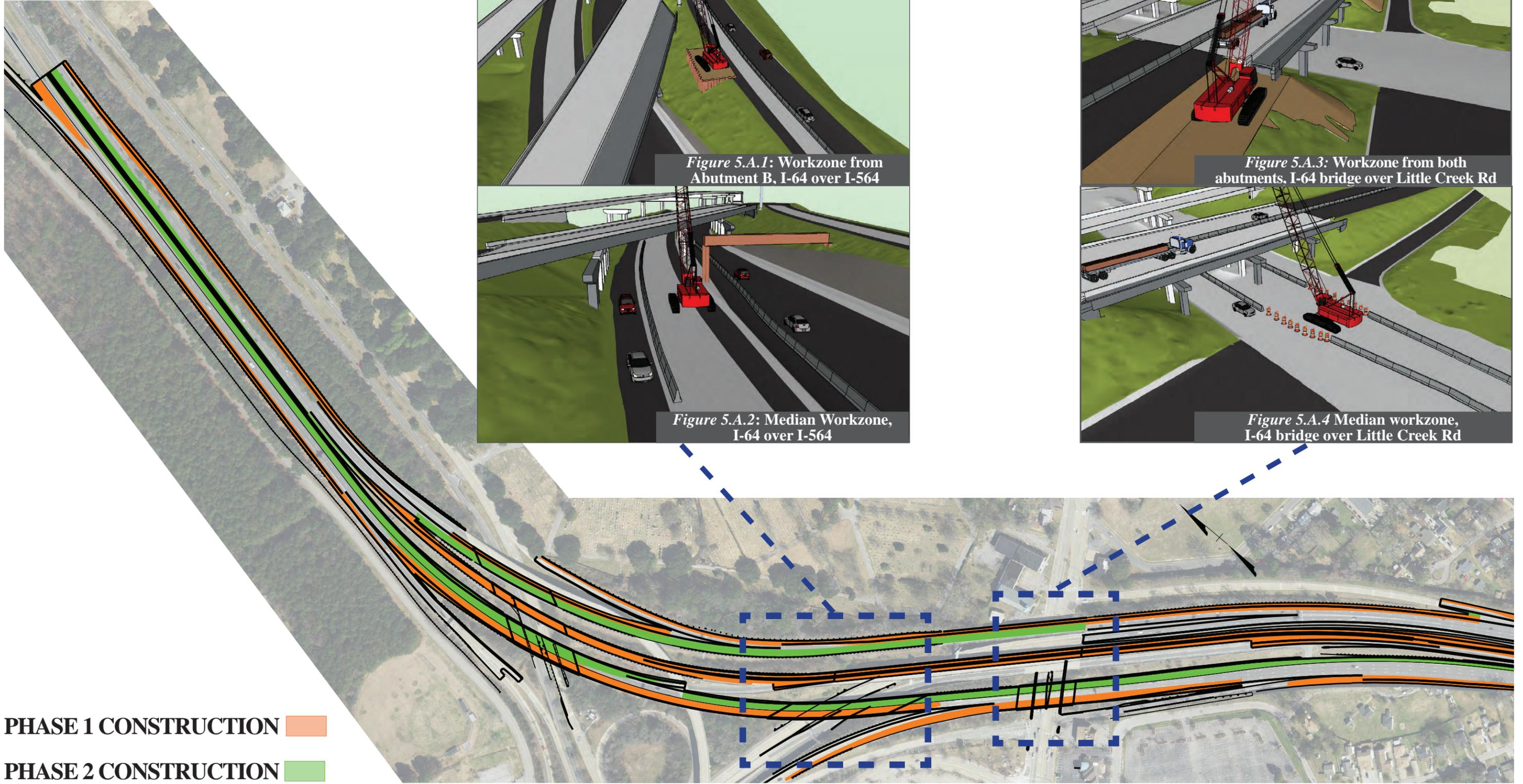


Figure 5.A.1: Workzone from Abutment B, I-64 over I-564

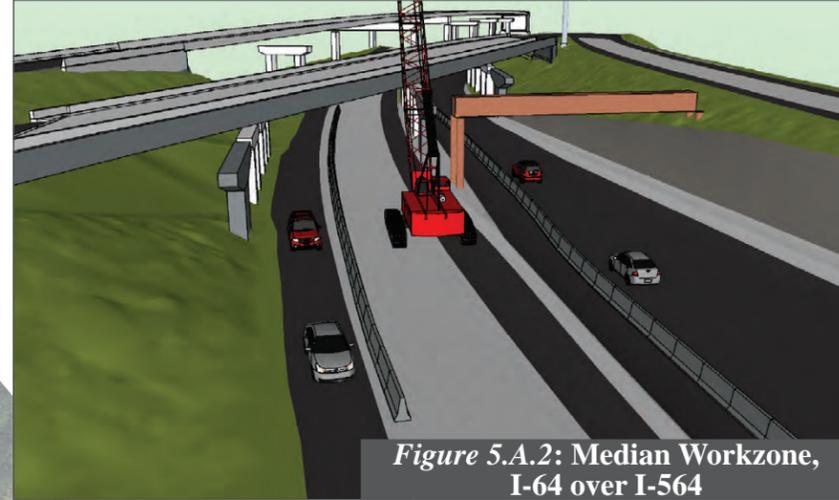


Figure 5.A.2: Median Workzone, I-64 over I-564

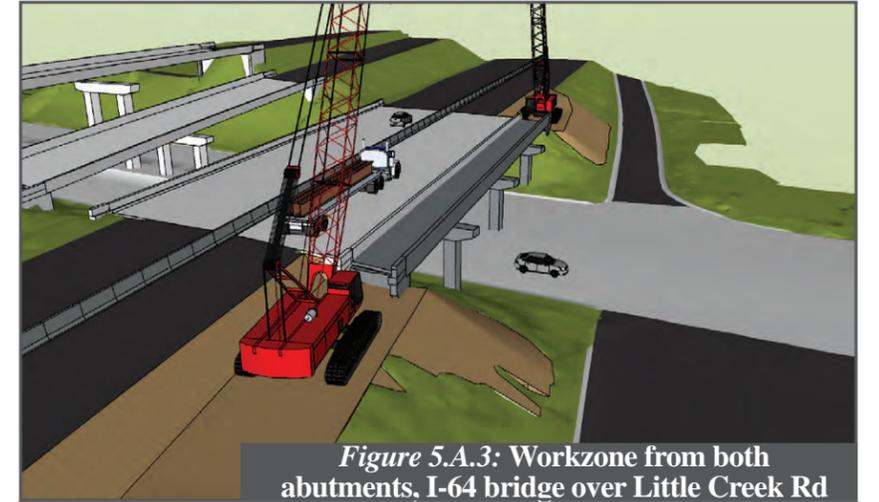


Figure 5.A.3: Workzone from both abutments, I-64 bridge over Little Creek Rd

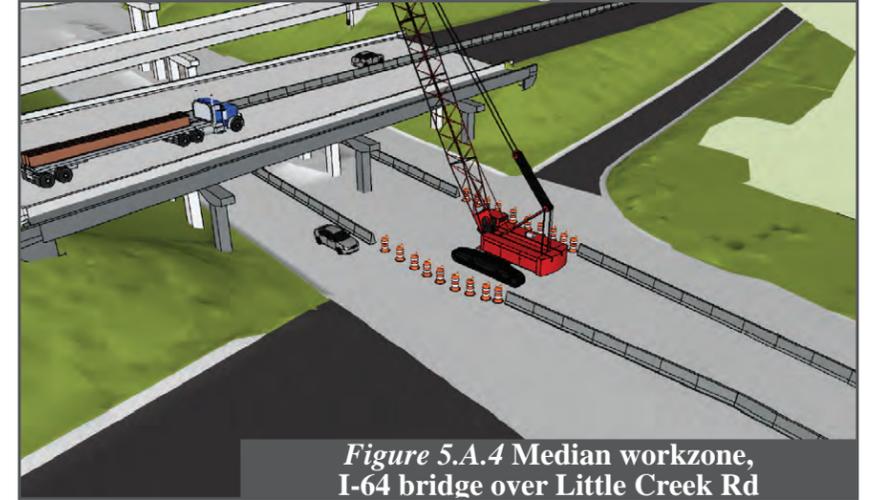


Figure 5.A.4 Median workzone, I-64 bridge over Little Creek Rd

PHASE 1 CONSTRUCTION 

PHASE 2 CONSTRUCTION 

I-564

LITTLE CREEK RD



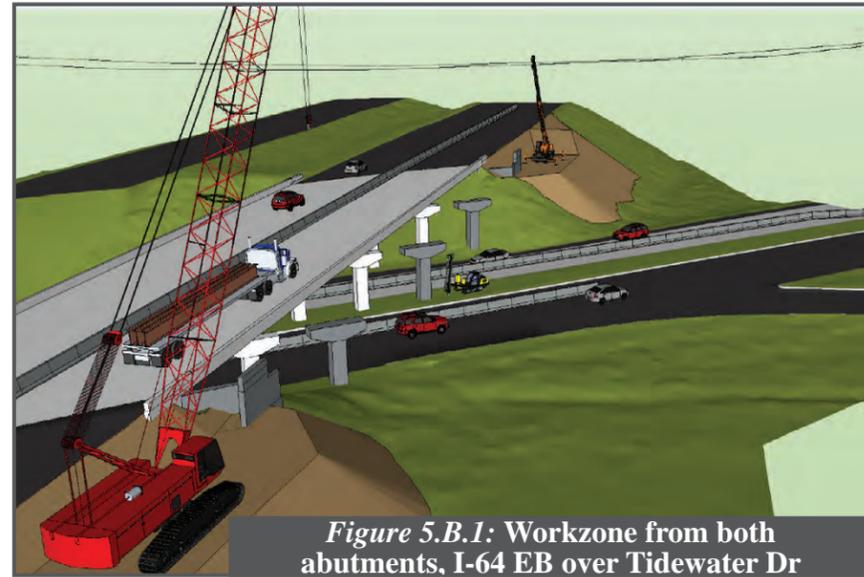


Figure 5.B.1: Workzone from both abutments, I-64 EB over Tidewater Dr

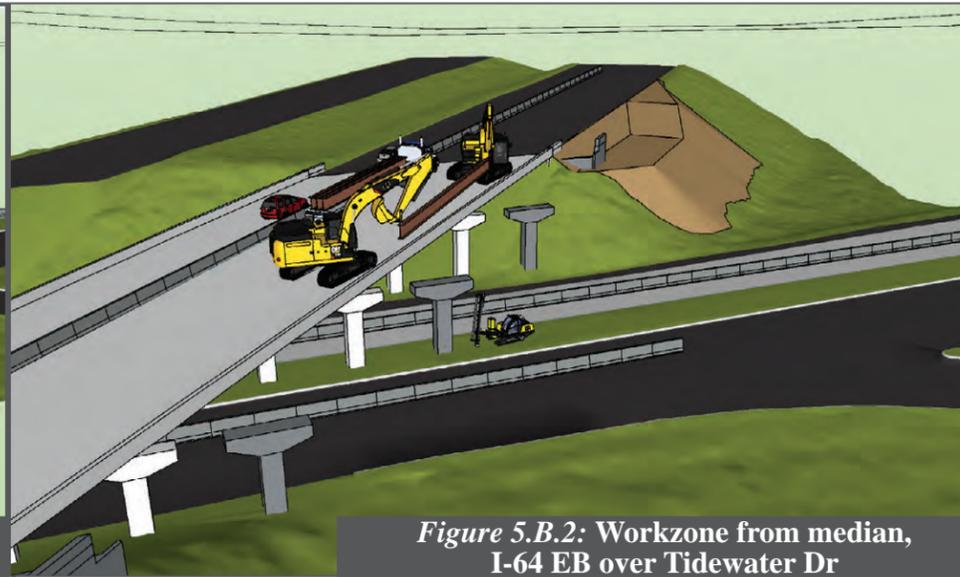
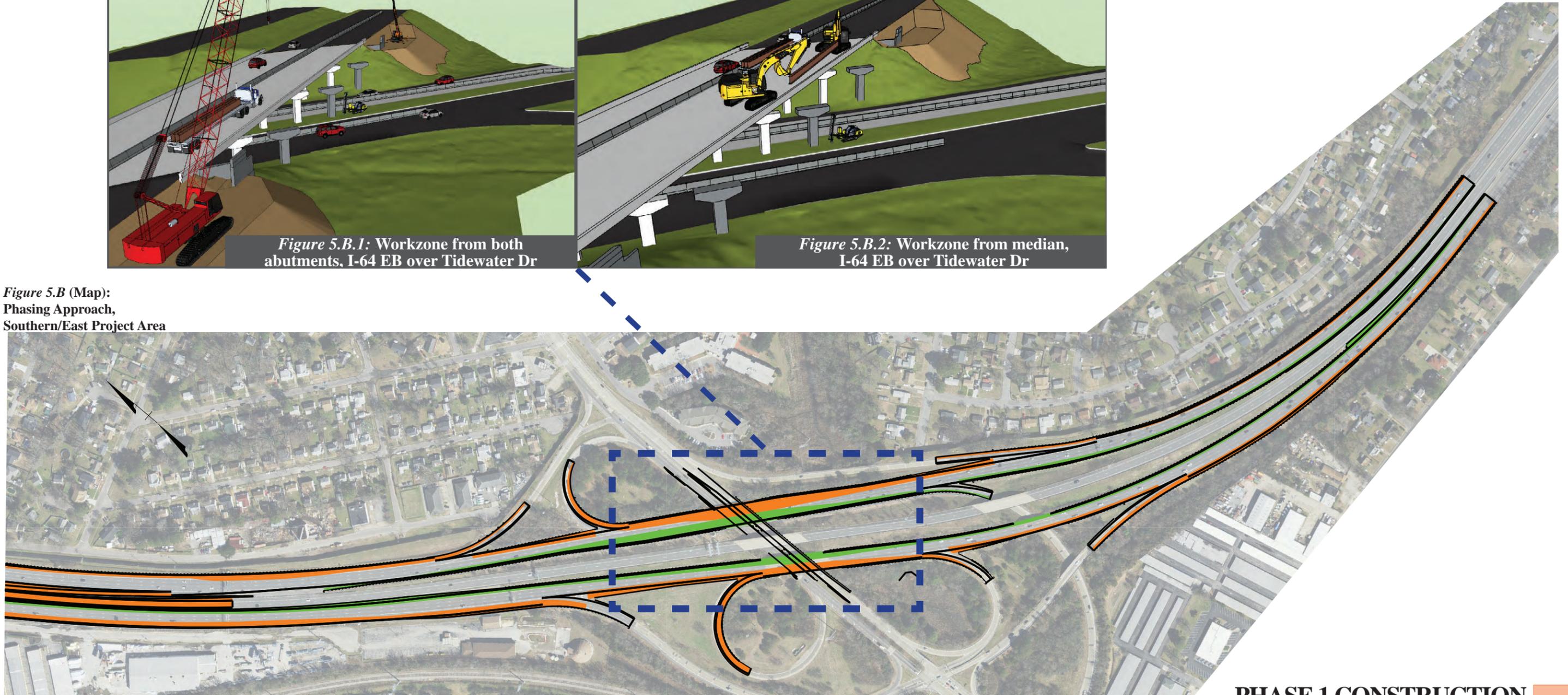


Figure 5.B.2: Workzone from median, I-64 EB over Tidewater Dr

Figure 5.B (Map): Phasing Approach, Southern/East Project Area



SCALE  
0 400' 800'

TIDEWATER DR

PHASE 1 CONSTRUCTION   
PHASE 2 CONSTRUCTION 

This proposed construction sequence provides a higher quality roadway for VDOT. By completing widening and rehabilitation work in two phases, we minimize construction joints in the deck extensions as well as the joint closures. Fewer joints create a more durable product, requiring less future maintenance and a longer life span.

✓ *Our ability to sequence the work in three phases means less time with construction work zones on the highway. Dedicated, behind-barrier-wall access to the work accelerates productivity and schedule.* Construction efficiency increases further with longer shifts (and multiple per day) to accelerate work. Alternative methods would require regular nightly and other off-peak-hour lane closure to complete work. This costly and inefficient approach would require dedicating much of each available work shift to setting up and taking down lane closures.

### Structure Construction Sequence

Bridge and wall construction utilizes access from the roadway underneath and from existing space on I-64 within the established work zone. Widening work for I-64 EB over Granby St, Little Creek Rd, and Tidewater Dr follows typical construction means, as sufficient median and shoulder space already exists. Pinch points at certain locations—especially the I-64 EB bridges over I-564 and Tidewater Dr—require special attention for access. We detail these issues below and illustrate them in *Figures 5.A* and *5.B* on pages 35-36.

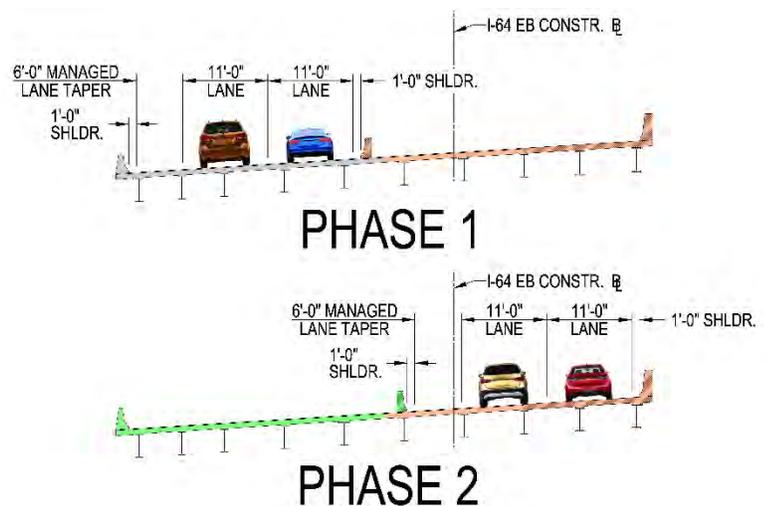
Construction of the retaining walls occurs with each bridge widening as the bridge work moves forward. In each overpass location, traffic barriers along the underpass street establish a safe work zone that permits an inside construction zone for median pier construction followed by an outside zone to complete outside piers and abutments. Within the work zones, we will stage cranes, pile driving, and other equipment required for construction. After completing the widening substructure, we will set bridge beams using 20-minute, short-term directional roadway closures between 12am and 4am (as permitted in RFP Section 2.10.3) and install lagging protection. Work will then proceed to complete the superstructure from the I-64 work zone areas, allowing removal of the traffic control on the underpass roadway.

### I-64 Over Granby St

Phase 1 construction maintains two general purpose lanes along the inside of I-64 EB and allows continued access to the I-64 EB managed lanes section. Bridge rehabilitation and widening occur along the outside of I-64. The work zone shifts inside during Phase 2 to complete the rehabilitation work (*Figure 5.1.2*). We will maintain access to the reversible section from the left traffic lane and taper. In Phase 2, we provide temporary protection to prevent accidental access from I-64 EB into the reversible lane section while in the WB direction.

Phase 1 widening work will take place from below, along Granby St, as well as from the work zone established on I-64. Access to construct the foundation and substructure for the abutments and piers will require phased traffic control along Granby St. This phasing process will include moving traffic to the outside and inside while temporarily taking one lane of traffic in each direction to facilitate access. At the start of Phase 1 (*Figure 5.1.3*) we will shift traffic to the outside of Granby St to allow for utility relocations, pier foundation, and column/cap construction. Once that work has been completed, traffic will shift into the center lanes and allow for construction access off Granby St to each abutment. Once the foundations and substructure are complete, the traffic controls will be removed from Granby St and work will continue from the I-64 work zone to complete Phase 1.

Figure 5.1.2: I-64 Over Granby St, Phase 1 & 2 Lane Shifts



During Phase 1, in conjunction with the outside widening of Granby St and I-564, new retaining wall 4 will connect the two bridges. This will take place within a construction zone that extends from east of Granby St along I-64 past the Little Creek bridge.

- ✓ *By encompassing the work in this area into a single work zone, we reduce the number of lane shifts and create a consistent traffic pattern for motorists, improving safety and operations.* Phase 2 at Granby St will still include construction of Wall 2A and 2B along the inside of I-64 EB in conjunction with new drainage and reconstruction of the inside shoulder.

**I-64 Over I-564**

The I-64 EB bridge over I-564 widening will occur in a highly congested section with multiple merging ramps from I-564 and Little Creek Rd. Phase 1 construction will maintain two lanes of traffic on the inside of I-64 over I-564. Phase 2 will shift the work zone to the inside and place traffic on the newly widened roadway and bridge structure (Figure 5.1.4).

In Phase 1, we will maximize our work zone by closing the inside shoulder and moving traffic along the outside shoulder of the reversible I-564 ramp onto the managed lanes section (Figure 5.1.5) and protect the work zone along the reversible ramp. We will place the crane and other equipment in this area behind the traffic barrier. Once work on the middle Pier 2 is complete, we will shift traffic to the inside, creating work zone access to Piers 1 and 3 (Figure 5.1.5).

The high skew angle of the bridge creates a challenge at Abutment B due to the merge of I-64 EB and the I-564/I-64 on ramp. The skew leads to an elongated abutment and requires installation of excavation support along the edge of the roadway running parallel with the I-564 ramp. Our access from this location will be from the shoulder and left lane of the I-564 ramp. We will install temporary excavation support along the outside edge of the I-564 ramp to assist with access and limit impacts to I-64 EB and the ramp from I-564 (see Figure 5.A.1, page 35).

- ✓ *Working from behind barrier protection, we can have full access to expeditiously complete Abutment B and Pier 3 from this location.*

Pier 2 of the I-564 bridge sits between the I-564 off-ramp and the reversible managed lane ramp, with an existing overhead managed lane sign near the pier. As with Abutment B, this location and the high skew of the joint creates challenging work access (see Figure 5.A.2, page 35).

- ✓ *We will establish construction access from the median area with barrier protection separating construction from traffic. This will permit access to complete the foundation and substructure work most efficiently and minimize impacts to I-64 and the I-564 ramps.*

Figure 5.1.3: Outside and Inside Access, I-64 at Granby St

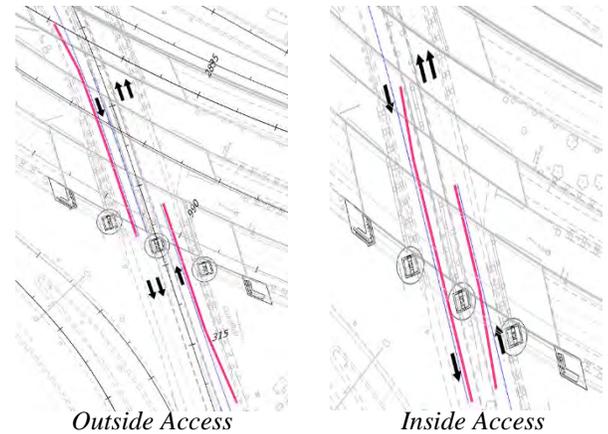


Figure 5.1.4: I-64 Over I-564, Phase 1 & 2 Lane Shifts

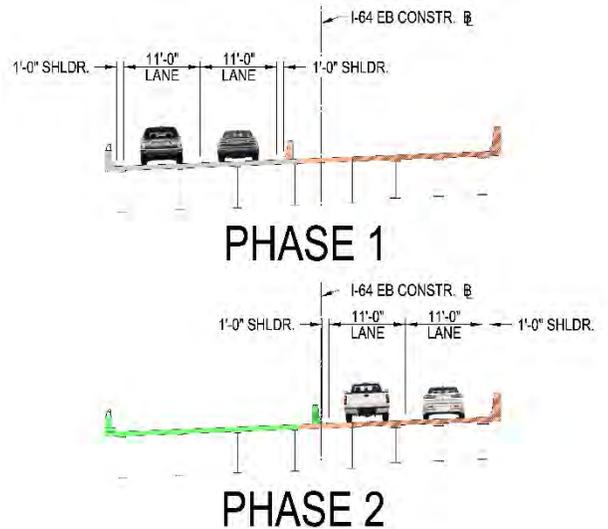
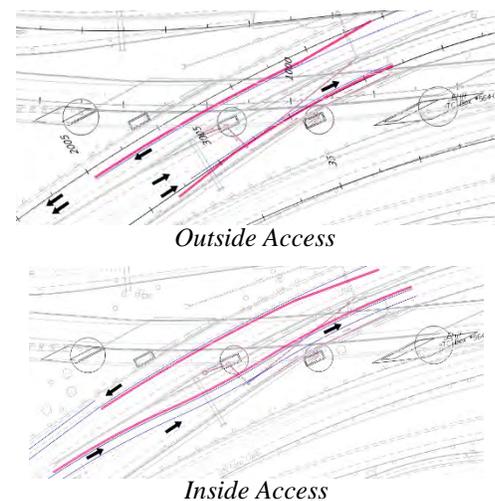


Figure 5.1.5: Outside/Inside Access, I-564



**I-64 EB Over Little Creek Rd**

During Phase 1 of the Little Creek Rd widening, we will maintain the required thru lanes on I-64 EB in addition to the two EB ramp lanes coming from I-564. Phase 1 will require a small lane shift to complete the full widening while maintaining these lanes. Phase 2 will complete the inside rehabilitation work (see *Figure 5.1.6*). Work will also take place from Little Creek Rd to complete foundation and substructure elements required for the widening.

✓ *Substructure work will take place from work zones on Little Creek Rd, maintaining a traffic pattern (Figure 5.1.7) that permits access to the bridge substructure and foundation.*

During the day, we will maintain access to the existing I-64 on and off ramps. To keep the intersection open during the day, we will stage from the median area along Little Creek Rd to the southwest of the bridge. Our crane, pile hammer, and other equipment will stage from a barrier-enclosed work zone and during night work hours will walk forward to drive pile, set form work, and complete the substructure scope for the center Pier 2 extension (see *Figure 5.A.4*, page 35).

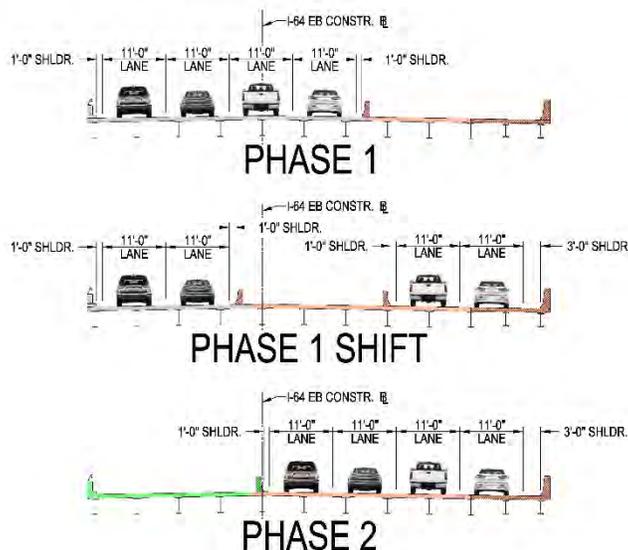
Construction access to Pier 2 during off-peak hours will require detouring the left turn movements from Little Creek to I-64 EB and from the I-64 EB off ramp to go north on Little Creek Rd (see *Section 4.5.2* for additional details). For work outside of the roadway section, there is sufficient room to level off the existing slope behind the abutment extensions, set up our equipment, and complete the other substructure elements (see *Figure 5.A.3*, page 35).

Retaining Walls 6 and 7 extend along the outside widening here. Wall 6 connects from the I-564 ramp and, as part of the widening at Little Creek Rd, we will construct this wall. The completed wall will permit shifting traffic along the I-564 ramp to the outside and open access to Abutment B of the I-564 bridge. Wall 7 will extend west from the Little Creek Rd bridge Abutment B as a part of the extension to wingwall from Abutment B.

**I-64 EB at Tidewater Dr**

Phase 1 will begin with widening I-64 EB. Our sequence maintains the required three through lanes along the inside of I-64 and in Phase 2 shifts traffic onto the widened section (*Figure 5.1.8*). Several overhead electrical lines cross perpendicular to the bridge over the span between Pier 3 and Abutment B approximately 28 ft above the deck. This complicates traditional equipment access to construct the foundation and elements of the substructure for Pier 3. It also complicates setting beams on the span under the power line. These constructability

*Figure 5.1.6: I-64 Over Little Creek Rd, Phase 1 & 2 Lane Shifts*



*Figure 5.1.7: Outside and Inside Access, Little Creek Rd*



issues drove our design decision to develop micropile foundations for the pier elements of the widening. We are confident that nontraditional means and methods can safely accomplish the work. The beams sizes are relatively small and potential options for beam placement include using rollers and pushing the beam from one end and picking from the other, a dual excavator pick or heavy-duty forklift from below (see Figure 5.B.1, page 36).

✓ *Developing a construction approach that prevents impacts to the existing overhead power lines avoids any potential schedule delays associated with shutdowns or relocations.*

As with the other bridge widenings, in Phase 1 we will employ an inside/outside approach to complete foundation and substructure work at the abutments and then the center pier working from Tidewater Dr. Starting from the inside (Figure 5.1.9) we will complete the center pier construction and then shift traffic to the center (Figure 5.1.9), creating access to the piers and abutments outside of Tidewater Dr (see Figure 5.B.2, page 36). With the substructure complete and beams set, the work will shift primarily to the work area on I-64 EB to complete the deck and parapet sections as well as the Phase 1 rehabilitation scope on the existing structure. Phase 2 will shift work inside to complete the remaining structure rehabilitation scope.

Along with the Phase 1 bridge work, construction in this section includes sound wall 10A, retaining walls 10B and 11, wall 12 at the drainage culvert just east of the Tidewater Dr bridge, and outside widening and Tidewater Dr bridge activities. Phase 2 will include small retaining walls 8 and 9.

✓ *By grouping this work together in this way, we create a continuous, long-term traffic shift for each phase that improves general motorist safety. It also allows for continuous construction methods that provide higher quality and faster completion.*

**I-64 WB at Tidewater Dr**

This work follows the same construction sequence as the EB bridges: Phase 1 outside widening and rehabilitation to Phase 2 inside rehabilitation (Figure 5.1.10). The width of the existing structure permits a relatively simple approach to work zones on the bridge that accommodates our two-phased approach on I-64 WB.

Figure 5.1.8: I-64 at Tidewater Dr, Phase 1 & 2 Lane Shifts

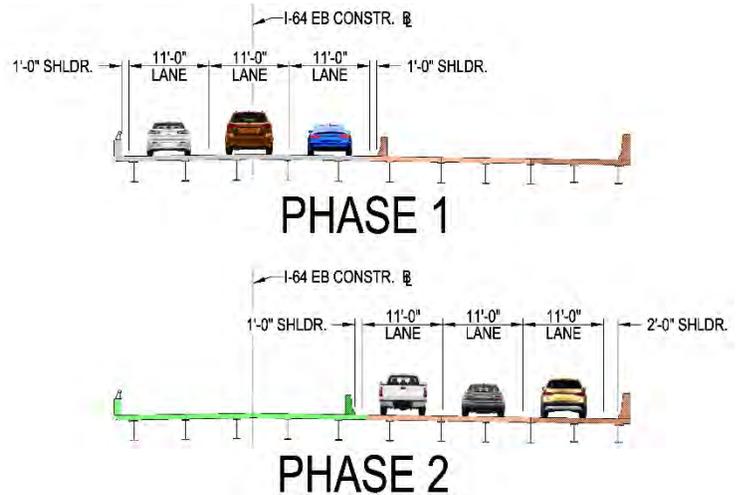


Figure 5.1.9: Outside and Inside Access at Tidewater Dr, I-64 EB

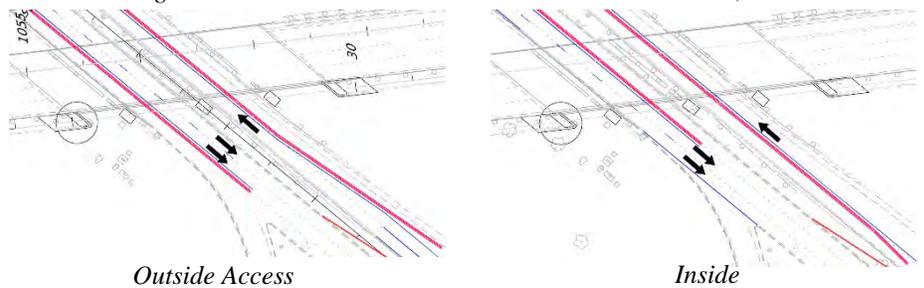
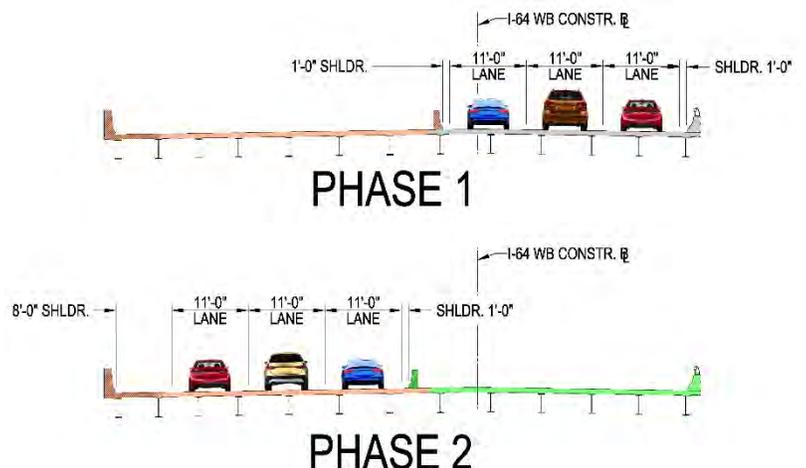
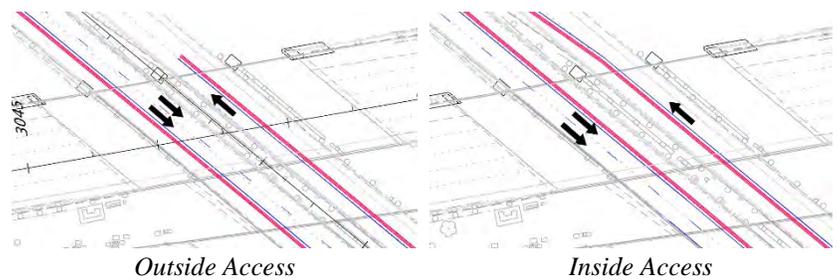


Figure 5.1.10: WB I-64 at Tidewater Dr, Phase 1 & 2 Lane Shifts



Similar to I-64 EB Tidewater Dr, the new foundation and substructure work will take place off of Tidewater Dr, using long-term lane closures on both inside and outside lanes to permit safe access to the work area (Figure 5.1.11). Traffic will shift to the outside to permit new pier construction and then shift to the center for the abutments and pier construction work outside of Tidewater Dr. Once the substructure is complete, traffic will return to its normal pattern and superstructure widening will take place from the I-64 WB work zone.

Figure 5.1.11: Outside and Inside Access at Tidewater Dr, WB I-64



**I-64 WB at Granby St & Little Creek Rd**

Each structure here requires rehabilitation work constructed from behind barrier wall in a two phased approach.

✔ *ATC #1 creates the necessary lane space to permit a single lane of traffic along both structures with a barrier wall line, enabling traffic to move safely in the through lanes at I-64 over both Granby St and Little Creek Rd (Figure 5.1.12). Utilizing the new WB managed laned in conjunction with a single through lane on I-64 WB permits more efficient construction due to continuous access to the work from behind barrier wall. This eliminates time-consuming and costly individual lane closures.*

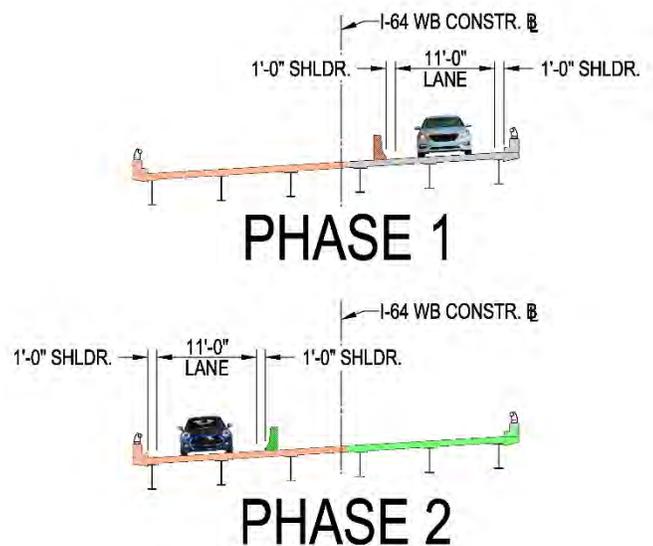
We perform Phase 1 and Phase 2 rehabilitation and overlay work on Granby St and Little Creek Rd structures simultaneously to provide a consistent traffic pattern in Section 1 WB during work. ATC #1 also streamlines the WB approach, allowing for two phases of construction.

✔ *This creates a consistent, long-term traffic control pattern that employs minimal temporary lane closures and no steel plates during our operations.*

Sound and Combination Wall 3A/B/C is in the Phase 1 construction zone between Little Creek Rd and Granby St. These structures also incorporate Sound Wall A. In conjunction with outside bridge rehabilitation, we will complete this wall, which primarily extends along the I-64 WB off-ramp to Granby St.

✔ *Keeping with our focus to minimize traffic impacts, this work takes place in conjunction with our ATC #1 and the moving of traffic to the inside of I-64. This makes use of the continuous traffic shift from east of Little Creek Rd through Granby St, increasing safety and construction efficiency while compressing the schedule.*

Figure 5.1.12: I-64 WB Phase 1 & 2 Outside/Inside Construction (typical) at both Granby St & Little Creek Rd



**Managed Lanes Reversible Lane**

Phase 1 includes reconstruction of the current single reversible lane section into the new dual section. This scope is crucial to implement ATC #1 and start Phase 1 of I-64 WB Section 1. This approach will allow VDOT to maintain reversible traffic access along this section while we complete conversion into the future two-lane section. The pinch point is primarily at the managed lanes bridge section over I-564.

✓ *As Figure 5.1.13 illustrates, we can safely maintain a reversible traffic lane by pushing traffic to the far outside and inside in a temporary configuration.* Installing a line of single face barrier at the construction limits permits enough access to complete the new median barrier, micro abutment extension, structure rehabilitation, and mill/overlay of the roadway.

During this phase, we will also relocate the ITS trunk line out of the managed lanes shoulder to its new location outside of the roadway section. This barrier section will extend the length of the managed lanes section to the eastern end past the new I-64 WB on ramp. This first step in construction will complete the median barrier section across the bridge and along the length of the roadway required to create the new divided managed lanes.

In addition, we will construct the new on-ramp from I-64 WB into the future divided managed lanes. After completing the future dedicated WB side of the managed lanes section, we will move the temporary reversible lane configuration onto this section and complete the new reversible lane and bridge rehabilitation. With the new median barrier completed, temporary barrier service will not be needed and completion of the bridge rehabilitation, mill, and overlay can proceed.

✓ *A key benefit of this approach is that it limits the amount of time to complete construction of the managed lanes.* The RFP permits a total of 21 days to close the managed lanes to traffic. Our approach requires a shutdown only to complete the last 50 ft of median barrier at the east end of the section. To accommodate the two-step approach, we will leave this section out during construction and maintain access from I-64 EB into the managed lanes. Once we complete bridge, median, and roadwork, we will utilize the permissible closure of the managed lanes to complete the last section of barrier, pavement, and drainage needed to place the new divided managed lanes section into the full traffic configuration. *This approach not only accelerates completion of the managed lane section overall, but also minimizes the duration of complete closure.*

**APPROACH TO ADDRESSING SAFETY, OPERATIONS, STAGING, AND STORAGE AREAS**

All incidents are preventable, and none are acceptable—no matter the severity. Myers integrates all Team members into our construction planning process—including construction QC/QA staff; environmental, traffic, and safety managers; and all major subcontractor partners. We share the Project CPM schedule with VDOT and all Project partners, develop five-week look-ahead schedules every week for each crew and subcontractor, and distribute them to all Project Team members, including VDOT, QA, and QC inspection staff. We also hold weekly schedule coordination meetings and develop a daily schedule of activities. Furthermore, we empower every person on our work

✓ *site to stop work in the event of a safety violation. By valuing and engaging all perspectives, Myers has achieved best-in-class recordable incident rates (Figure 5.1.14).*

Figure 5.1.13: Managed Lanes Reversible Lane Phase 1

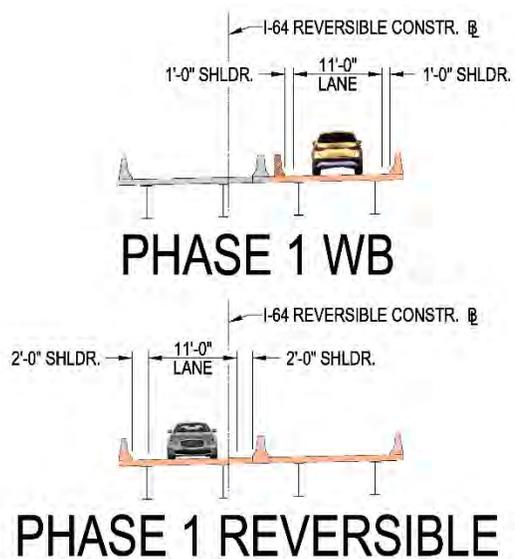
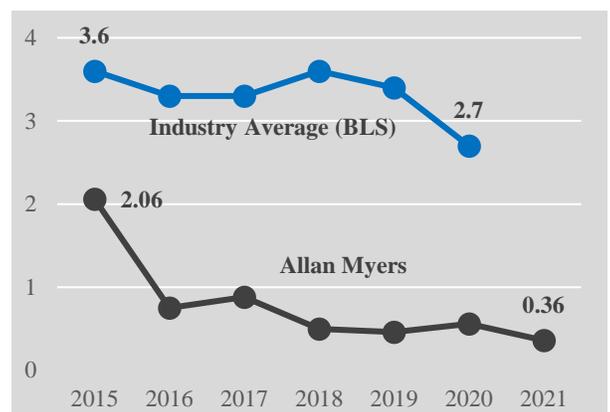


Figure 5.1.14: Myers Incident Rate vs. Industry Average



### Project-Specific Health and Safety Plan

Josh Brown (Safety Manager) will be responsible for overall Project safety in compliance with all regulatory and VDOT requirements and policies. Josh develops the Project-specific Health and Safety Plan (HASP) to address Project-wide safety requirements, with a specific focus on traffic and bridge rehabilitation/widening. Josh continually evaluates the Project's safety performance and implements additional safety measures as necessary to maintain worker and public safety.

#### ✓ *Notable safety best practices our Team will implement on the Project include, but are not limited to:*

- ***Jobsite Safety Orientation:*** Josh conducts Safe Start orientation with each crew to review the Project HASP, discuss unique risks and challenges, identify access points, and convey traffic-related concerns.
- ***Beginning and End-of-Shift Huddles:*** Led by the field manager, each crew discusses potential safety hazards for the shift ahead, voices any concerns, and builds a plan together to mitigate any safety concerns.
- ***Job Hazard Analysis:*** We break down critical scope elements to analyze the hazards associated with each element of the work and the safety measures to be implemented to address each hazard.
- ***Project-Wide Health, Safety, and Environment (HSE) Meetings:*** The Myers Team holds regular Project-wide meetings to discuss safety performance, upcoming changes to access and traffic patterns, and any frequently observed concerns or safety trends.

### Traffic Safety

Jeff Baker (CIMC) will implement our traffic and safety program to ensure motorists, pedestrians, and bicyclists safely navigate the construction zones. See *Section 4.5.2* for additional information about our Team's approach to the development and implementation of the Project's Transportation Management Plan.

### Bridge Rehabilitation and Widening

The five bridge widenings entail selective demolition work with special attention to hazards like silica dust, working near traffic, utilities, and equipment placement. Our Team trains all crews on silica exposure and lead paint hazards associated with the demolition and employs best practices to prevent falling objects and fugitive emissions. In addition, equipment will often be working from below the structures, off the roadway underneath. This requires additional caution in planning structure demolition and rehabilitation to maintain safety of the traveling public. We will employ extensive demolition planning, approved by VDOT, to manage the process.

### Staging and Storage Areas during Construction

The Project corridor has limited opportunities for staging equipment and materials. We will secure proper environmental clearances for all properties used for staging and storage. Narrow portions of the RW and gore areas adjacent to the Project and interchange infield area will play a particularly important role, as they are already within the Commonwealth's inventory and are located closest to the workface.

- ✓ ***Nearby Facilities:*** Given these limitations, any staging and storage solution needs to bring major materials and equipment in and out for each phase of construction. *Myers owns a permanent asphalt plant and laydown yard in Chesapeake, less than 15 miles from the Project area. By capitalizing on our regional presence—most notably, existing space and trucks for hauling equipment—we will efficiently and cost-effectively deploy resources while minimizing impacts within the high-volume I-64 corridor.*

- ✓ ***Workface Areas:*** Mobile operations allow us to transport tools, equipment, and materials daily into and out of the workface. For some substructure repairs and utility work, crews are able arrive each shift with what they need and return to the staging areas at end of shift. For larger operations, such as foundation piling or bridge beams, the materials required to meet that shift's production goal will be delivered from staging to help mitigate traffic impacts along the Project corridor. As noted in *Section 4.5.1*, we have made multiple site visits to address operational areas of concern such as crane size and placement for bridge substructure work. *We have also adjusted our design to meet the operational requirements in certain areas, such as using micro piles as the foundation elements for I-64 EB Tidewater Dr Bridge widening to avoid the overhead power lines.*

#### 4.5.2 TRANSPORTATION MANAGEMENT PLAN

Our Team's Transportation Management Plan (TMP) focuses on safely and efficiently handling traffic in this vital corridor throughout construction. We understand that maintaining traffic during construction and traffic management are the biggest challenges of this Project. Our Team's design is highly integrated with construction to reduce impacts to traffic during construction in the following ways:

- ✔ • *ATC #1 opens the managed lanes early, which allows the I-64 WB lanes to be constructed in a compressed schedule with fewer impacts to the public*
- ✔ • *We prioritize construction of the new managed lane section, opening them on June 19, 2024.*

Our Traffic Engineering and Analysis Team, led by **Dana Trone**, analyzed different options to maintain traffic and the impacts each would have on the transportation system. These options include ATC#1, the Tidewater Dr ramp closure, and a nighttime detour at Little Creek Rd which are further described below.

All work will meet the requirements set by the RFP, *FHWA Manual of Uniform Traffic Control Devices* (MUTCD), and *Virginia Work Area Protection Manual* (VWAPM). VDOT's *Instructional and Informational Memorandum (IIM) No. LD-241/TE-351* also guides the design of the TMP. Per this IIM, the Project is classified as Type C, Category V; meaning it is anticipated to cause sustained and substantial work zone impacts. The major components of a Type C Project TMP are the Temporary Traffic Control Plan, Public Information and Communications Plan, and Transportation Operations Plan.

Following NTP, our Team holds an initial partnering meeting with VDOT, the City, and third-party stakeholders to review the Project requirements, discuss traffic concerns related to construction, and develop a checklist of responsibilities and timelines for successfully achieving agreed-upon TMP activities and goals.

Our Team's roadway, bridge, and traffic engineers collaboratively developed our proposed Temporary Traffic Control Plan alongside our construction Team, focusing on the following objectives:

- Coordinate with contractors of other active construction projects in the vicinity of the I-64 HREL Segment 1A Project, including the HRBT project and I-64 Segments 1B, 3, and 4C, in accordance with *RFP Part 2, Section 1.7*
- Minimize the number of traffic shifts to maximize safety and meet driver expectations
- Maintain required travel lane widths of 11 ft throughout construction (10 ft where allowed) and restrict shoulder closures to only shoulder strengthening work in the preconstruction phase
- Physically separate the work area and the travel lanes using barrier service
- Use a design speed on I-64 that matches the existing posted speed limit of 55 mph
- Close the reversible managed lanes for a maximum of 21 days and as allowed in Table 4 of Section 2.10.3 of the RFP, Lane and Road Closure Restrictions (understanding VDOT's Team includes Hampton Roads Transportation Accountability Commission (HRTAC) for tolling)
- Provide additional field reviews by traffic engineering staff during construction, verifying implementation of the TTCs and recommending enhancements, in addition to regular work zone safety inspections, thereby improving safety
- Work with the City of Norfolk and the Navy Base to coordinate planned lane closures on I-64 and cross streets to allow the City to optimize and re-time signals and develop strategies to limit cut-through traffic

The Public Information and Communications Plans (PICP) will be submitted to VDOT for review and approval in advance of any construction activity on the site. The PICP will feature the following key elements:

- ✔ • *Leadership of a highly experienced (including I-64 Segment II) public information manager (Shannon Moody) who will identify VDOT's Project communication goals and objectives, and ensure compliance*
- Define communication plan goals and objectives
- Include a TMP specifying alternative routes and detours
- Identify communication partners, target audiences, key stakeholders, and communication challenges

- Proactive stakeholder communications, close coordination with VDOT, and consistent public outreach
- Ensure that stakeholders can easily and quickly access information regarding the Project
- Discuss crisis communications and include a Risk Management Plan
- Identify communications tools, tactics, and strategies
- Utilize temporary changeable message signs to communicate with motorists about upcoming traffic pattern changes a minimum of 21 days in advance of the switch
- Coordinate with the I-64 HRBT Expansion Project, HREL Segments 1B, 3, and 4C, and the I-64 Structural Steel Repairs—6 Bridges projects for public information and outreach activities
- Include an advertising and marketing campaign
- Hold a Community Open House to provide an opportunity for the public to meet the construction Team and learn about the Project, while we provide interactive activities for children

**Jeff Baker** (CIMC) manages our Incident Management Plan (IMP), which includes these key features:

- Coordination with VDOT, EMS, and stakeholders, including a stakeholder meeting
- 24/7 point of contact for Traffic Operations Center (TOC) emergency notification of incident
- Emergency detour routes and sign layout plans in addition to TMP signage
- Agency and stakeholder responsibilities matrix/checklist to clarify roles and establish accountability
- Pre-staged detour equipment and material needs
- Coordination with VDOT Hampton Roads TOC to alert them of incidents and quickly install detours
- Details for law enforcement, fire, and rescue access to the road network during incidents
- Pre-planned messages for various types of incidents for the portable dynamic message signage (DMS)
- Contact list for appropriate stakeholder response personnel
- Wrecker service to remove disabled vehicles within the Project limits

Jeff conducts a kick-off meeting with all first responder stakeholders, provides monthly updates to the VDOT IMC, and responds to all incidents within Project limits. He follows VDOT safety regulations, works under the VDOT IMC when on the scene of an event and, when needed, serves as the Incident Commander until the VDOT IMC arrives. Jeff attends orientation training and all IMP meetings and meets with VDOT upon request. He has a truck equipped for incident management, including a portable radio for communication with the TOC. Jeff works closely with all emergency agencies and completes After Action Reports.

#### **MAINTENANCE OF TRAFFIC (MOT)**

Our MOT plan includes open shoulders whenever possible. We design all tapers and shifts for the posted speed limit of 55 mph. We install, maintain, adjust, and remove construction signs and temporary pavement markings, including one-tenth mile markers, for the duration of the Project. We conduct maintenance of guardrail, grass cutting, and pothole repair as required in the RFP. The TMP also accommodates safe and efficient snow removal operations and ensures proper drainage during all phases of construction. Access to all businesses and private entrances will be maintained at all times. We will monitor implementation and execution of the MOT plan and coordinate necessary adjustments to ensure that traffic flows as smoothly as possible throughout the corridor.

Our MOT plan will:

- Eliminate use of steel plates to reduce construction duration and increase safety
- Maintain the amount and number of lanes required by the RFP in each direction along I-64, except for periodic nighttime lane closures, as necessary
- Provide emergency pull-off areas and limit work area lengths when a 9-ft shoulder cannot be maintained
- Develop an Incident Management Plan prior to shifting traffic for each phase of construction, including emergency vehicle access, detour routing plans, and onsite wrecker service
- Utilize temporary changeable message signs to communicate traffic pattern changes

- Coordinate with stakeholders on any access issues associated with construction
- Complete Engineering and Traffic Investigation and utilize Work Zone Channelization/Barrier Analysis following the VWAPM, Roadway Design Manual, and IIM-LD-93
- Maintain all affected entrances, intersections, and pedestrian access on local roads
- Provide detailed lane, shoulder, or road closures, following the allowable hours in the RFP
- Provide traffic analysis in accordance with the TOSAM for any proposed closures or realignments of auxiliary or weave lanes, and any shortening of acceleration/deceleration lengths at the interchanges
- Evaluate temporary drainage to confirm spread meets the allowed maximum in the roadway and bridge travel lane
- Provide continuous interchange and acceleration/deceleration lane access at all times during construction

**Preconstruction:** This initial phase prepares the Project for construction. During this phase, we use TTC-16.2 and TTC-17.2 of the VWAPM to provide lane closures during allowable hours, strengthen the shoulder, and lay temporary pavement along the I-64 median and other areas that require traffic shifts during Phase 1.

**Phase 1:** This phase will begin once preconstruction is complete.

- I-64 EB: Traffic shifts, where necessary, onto the newly strengthened shoulders. We will install the temporary concrete barrier with TTC-16.2 of the VWAPM during allowable hours so that pavement widening to the outside can occur. Widening of the I-64 EB bridges over Granby St, I-564, Little Creek Rd, and Tidewater Dr also occur at this time. Additionally, we begin to complete retaining walls, noise walls, drainage, and any other outside work.

Once widening of the I-64 EB bridge over Little Creek Rd is complete, we will modify traffic so the I-64 EB lanes stay to the left and the I-564 on-ramp shifts to the right, allowing for repairs to the center portion of the bridge. We will install temporary concrete barrier and use lane closures during allowable hours to achieve this new lane configuration.

- I-64 Managed Lanes: The roadway portion of the managed lanes will be completed by shifting the existing lanes of traffic. We will install temporary concrete barrier and use the allowable managed lane closure hours. Our plan will keep one lane open during most of the construction by phasing construction of the bridge and only utilizing part of the allowable 21-day closing of the managed lanes to complete the final 55 ft of median barrier (BMB-3) construction.
- I-64 WB ATC #1: Once the I-64 managed lanes are constructed, WB traffic will be modified to utilize the newly constructed managed lanes. *This innovative use of the managed lanes is our Team's ATC #1*, which modifies the I-64 WB General Purpose Lanes. The left lane will utilize one of the previously constructed managed lanes, and the right lane will remain in its existing location, shifting only as needed for bridge repairs. This ATC reduces the I-64 WB lanes over Granby St and Little Creek Rd to one lane, which provides access to complete the joint work without using steel plates. The reversible lane remains open and separated by concrete barrier. This ATC also applies to roadway construction between the managed lane exit and entrance ramps, with temporary construction barrier installed on the outside using TTC-16.2 of the VWAPM during allowable hours. This ATC enhances safety, schedule, and cost.
- I-64 WB: In WB areas before and after the managed lane entrance and exit ramps, traffic shifts onto the newly strengthened shoulders. We install temporary concrete barrier with TTC-16.2 of the VWAPM during allowable hours to allow pavement widening to the outside to occur. The widening of the I-64 WB bridge over Tidewater Dr, retaining walls, sound barriers, drainage, and any other outside work can be completed at this time.

**Phase 2:** This phase will begin in each section of I-64 EB or I-64 WB once the corresponding Phase 1 work concludes.

- I-64 EB: Traffic will shift, where necessary, onto the newly widened roadway. We will install the temporary concrete barrier with TTC-17.2 of the VWAPM during allowable hours to enable median and barrier construction on the inside to occur. We will make repairs to the I-64 EB bridges over Granby St,

I-564, Little Creek Rd, and Tidewater Dr. We will also complete retaining walls, ITS, drainage, and any other median work.

- WB ATC #1: WB traffic will continue to be modified to utilize the newly constructed managed lanes. The I-64 WB General Purpose Lane on the bridges over Granby St and Little Creek Rd shift as needed for bridge repairs. We will install temporary construction barrier where needed using TTC-17.2 of the VWAPM during allowable hours to protect roadway median work.
- I-64 WB: In WB areas before and after the managed lane entrance and exit ramps, traffic will shift onto the newly widened roadway. We will install the temporary concrete barrier with TTC-17.2 of the VWAPM during allowable hours to protect median and barrier construction on the inside. Repairs to the I-64 WB bridge over Tidewater Dr, retaining walls, ITS, and any other median work will be completed at this time.
- Phase 2 will include final roadway pavement overlay and striping, as well as the hydro-mill and placement of Very High Early Strength Latex overlays on each bridge. This work will take place with nightly lane closures and finish by reopening all lanes to traffic at the end of each shift. By using very high early latex we can complete a lane width in one night shift and place traffic on it in the morning. With final paving complete, we will move traffic into the final lane configuration. All signs, electrical work, and ITS systems will be completed by the end of this phase. When ready, we will open the managed lanes to traffic.

**Sideroads:** Sideroads will be impacted by bridge construction. We will utilize a combination of TTC-6.2, TTC-16.2, TTC-17.2, TTC-20.2, TTC-41.2, and TTC-48.2 to maintain traffic and maintain all affected entrances, intersections, and pedestrian access points.

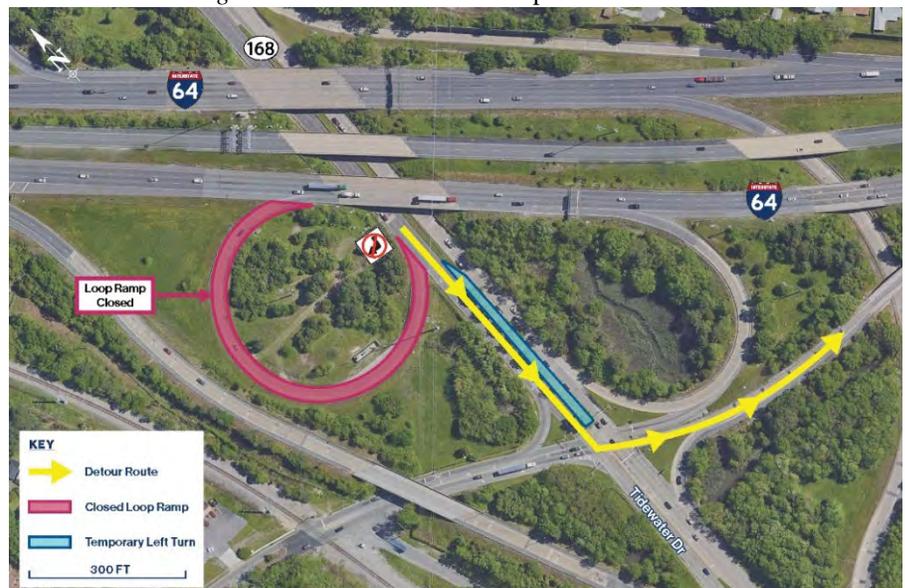
The signal pole on the southeast corner of the Little Creek Rd intersection with I-64 EB ramps will need to be replaced to accommodate widening of I-64 EB over Little Creek Rd. We will upgrade the sidewalk ramps at all four corners of this intersection to meet ADA standards.

**Tidewater Dr Loop C Detour:** To allow for two-phase construction and rehabilitation of the I-64 EB Tidewater Dr bridge, we propose temporarily closing Loop C (Tidewater Dr SB to I-64 EB) at the Tidewater Dr Interchange. Traffic would detour from the existing loop ramp to a temporary left turn onto the existing I-64 EB Ramp C further to the south opposite Thole St. We would construct a left-turn lane along Tidewater Dr SB and modify the traffic signal to provide a Tidewater Dr SB left-turn phase, as depicted in *Figure 5.2.1*. Benefits include:

- Reduce construction duration and allow all bridge widening and most joint repairs to be completed behind concrete barrier
- Improve safety with construction behind the temporary concrete barrier, eliminating the need for temporary steel plates to maintain traffic
- Improve safety by eliminating the existing weaves along I-64 EB and SB Tidewater Dr

For the temporary closure of Loop C (Tidewater Dr SB to I-64 EB), we will add a temporary left turn to allow Tidewater Dr SB traffic to utilize the existing Ramp C on-ramp. The left turn will be signalized with a left-turn

Figure 5.2.1: Tidewater Dr Loop C Detour



phase. Although this adds a movement to the existing signalized intersection, this is not a new access point and an access point will be removed along I-64 EB.

✓ In considering the closure of Loop C (SB Tidewater Dr to I-64 EB), we reviewed existing traffic counts contained in the traffic operations memorandum included in the RFP. *Our Team prepared a Synchro model to analyze the impact of detouring traffic from Loop C to the SB Tidewater Dr left-turn lane to I-64 EB.* We determined from the results of the analysis that, with the closure of Loop C, the intersection of Tidewater Dr at Thole St would operate at overall intersection LOS C during both AM and PM peak hours, with all movements operating at LOS D or better. The overall intersection delays are within 8 seconds of existing conditions. SB Tidewater Dr left turns can be accommodated within the proposed SB Tidewater Dr left turn lane.

Figure 5.2.2: Little Creek Rd Detour



#### **Little Creek Rd Detour:**

To accommodate bridge construction, the intersection of Little Creek Rd and Ramp B will be closed to left turns during nighttime hours while median pier construction is completed. This traffic will detour to E. Admiral Taussig Blvd and Granby St as shown in *Figure 5.2.2*.

### **MAJOR PROJECT STAKEHOLDERS AND APPROACH TO PUBLIC OUTREACH**

**Shannon Moody** (Public Relations) leads our public outreach efforts. Her critical role and access to information are reflected in her direct reporting relationship to Ed. She will further build and expand her relationships with local stakeholders (including the U.S. Navy) and the public that she established as public relations manager for I-64 Segment II and Rte 460 in neighboring Suffolk, VA. She promotes trust through both formal communication channels and regular, documented, and transparent conversations between our Team and VDOT, as well as the City of Norfolk and other stakeholders. Shannon leads individual meetings with Project stakeholders, in compliance with the *VDOT Policy Manual for Public Participation in Transportation Projects*, to understand concerns, share information, and provide input from diverse perspectives for the TMP and site-specific Safety Plan.

Shannon will lead development of our Public Information Communications Plan (PICP) in partnership with the City of Norfolk Department of Communications. VDOT will receive this document within 45 days of the Date of Commencement for review and comment, and Shannon will update it over the life of the Project. It includes:

- Goals and Objectives
- Target Audiences and Key Stakeholders
- Emergency Communications/Risk Management Plan
- Advertising and Marketing Campaign
- Traffic Management Plan
- Communications Partners
- Communications Tools, Tactics, and Strategies
- Defined News Media Strategy

We have identified the following key stakeholders, potential impacts, and communication strategies:

Figure 5.2.3: Stakeholders, SOC Impacts, and Benefits of Communications

Stakeholder	Potential Interests & Concerns	Benefits of Communications
VDOT	Adjacent projects Relationship and reputation with stakeholders	Build our Team’s partnership with VDOT Integrate VDOT’s perspective and input Builds public trust by VDOT communicating updated, consistent information
City of Norfolk (incl. emergency services)	Direct impacts to Forest Lawn Cemetery Emergency services continue to provide high quality, fast service despite construction impacts	Integrate perspective of critical public services into the design Ensure that construction minimally impedes critical public services
Federal Highway Administration	Adjacent projects	Minimize impacts to adjacent projects
U.S. Navy, Virginia Port Authority	I-564 as major artery for traffic to/from Norfolk Naval Station and Port of Norfolk Direct impacts to adjacent property	Manage expectations and build trust Further build existing relationships
Utilities (City and Private)	Continuity of service throughout construction	Minimize utility-related risks
General Public	Impacts to commuters Direct impacts to adjacent neighborhoods and businesses	Manage expectations and build trust
Environmental & Cultural Agencies	Impacts to fragile natural and cultural resources	Streamline permitting and compliance process
Elected Officials	Constituent safety and inconvenience caused by construction	Build relationships and trust with the public and local government and manage expectations

Our Team employs several tools to deliver transparent, two-way communications with Project stakeholders:

Figure 5.2.4: Communications Tools

Tool	Frequency	Engaging	Content, Deliverables, & Strategies
Public Information Meetings	Semi-annual meetings and before major traffic pattern changes	General public	Share traffic impacts, proposed clearing limits, proposed landscape plans, SWM design and improvements, etc.
First Responder Meetings	Semi-annual formal sessions Regular discussions during design and construction	Police; Fire Department; EMT; 911 Emergency Communications	Resolve access issues and construction impacts, share schedule/progress; Designate key points of contact with emergency response teams
Stakeholder Meetings	Regularly during design and construction	General public City of Norfolk	Resolve conflicts, concerns, and potential impacts; Attend association meetings of impacted neighborhoods and relevant City board meetings; Log stakeholder inquiries, responses, and resolution of concerns (available to VDOT upon request)
E-Mail and Text Updates	Regularly during design and construction	Regularly updated, advertised, and curated stakeholder list	Share Project updates, upcoming construction activities, and future impacts
Traffic Impacts / Notifications	Before all impacts to motorists: Coordinating weekly or bi-weekly before major traffic pattern changes	VDOT and City of Norfolk (for further distribution), local media	Notification of traffic pattern changes and input on how to mitigate local street impacts In coordination with VDOT, meet with local traffic reporters to communicate upcoming impactful changes and work
Website and Social Media Updates	Regularly during design and construction	General public	Provide content for VDOT HREL Network website, social media, and media channels; Provide calendar of planned construction activities, including relevant local special events that may be impacted
Construction Progress Updates	Monthly during construction	VDOT, City of Norfolk (for further distribution to stakeholders)	Construction photographs Project look-ahead schedule Planned traffic impacts
Project Advertising Strategy	As determined in collaboration with VDOT	VDOT, City of Norfolk (for review and approval)	Develop and implement paid advertising and marketing strategy
Collateral Materials	As determined in collaboration with VDOT	Traveling public, tourism, trucking	Informational marketing and communication materials, in partnership with City of Norfolk Communications and Norfolk Convention and Visitors Bureau

## PUBLIC SAFETY

The Myers Team's commitment to safety inherently includes both our workforce and the public. To design a work zone that gets our employees Home Safe Every Night, we must engineer traffic patterns that keep motorists and the community safe. **Josh Brown** (Safety Manager) leads these efforts for the Project. He provides guidance during the design phase to limit changes to traffic patterns, provide safe access to construction areas, and reduce construction impacts throughout the Project corridor. He also leads safety training, inspections, and subcontractor mentoring efforts. Shannon coordinates with Josh to communicate safety concerns (e.g., traffic changes) to the community and traveling public.

The preconstruction phase includes limited shoulder improvements conducted using allowable lane and shoulder closure times with minimal impact to traffic. Phase 1 and Phase 2 include the primary construction scope of work. Our placement of barrier wall along the interstate will create a reliable, understandable, long-term traffic pattern. This will improve traffic flow and safety by avoiding frequent changes. This approach permits accelerated I-64 EB construction and early opening of the new dual lane managed section. We also have eliminated the use of steel road plates by keeping all widening and rehabilitation work behind barriers, physically separating traffic from the work areas, which will improve motorist safety.

- ✔ *To maximize public and worker safety during nighttime work operations, Myers will deploy our work zone lighting systems (as shown in Figure 5.2.5) which go above and beyond industry standards to help mitigate safety risks.*

Figure 5.2.5: Exceeding Industry-Standard Night Lighting



Mill and overlay operations will use nightly and weekend hours to complete only enough overlay as possible in each shift. We will employ very high early latex concrete, which has a proven track record with VDOT of providing a safe, high-quality product that we can reliably place in single shifts and have traffic running on it in 8 hours or less. From a safety perspective, this eliminates the need to put traffic on milled pavement on the bridges.

The section of I-64 WB through Little Creek Rd and Granby St bridges is the tightest on the Project. Maintaining two lanes of traffic through this section would not be possible without frequent lane closures.

- ✔ *Our ATC #1 eliminates regular mobile lane closures.* Our plan provides for safer traffic patterns along the narrow two-lane section of I-64 WB through the construction area that covers the rehabilitation of WB Little Creek Rd and Granby St bridges. We will separate the work zone and the through traffic with barrier wall, which is safer for traffic than temporary lane closures behind barrels and TMA trucks. The plan will create a consistent traffic pattern during construction.

- ✔ *Once educated about the MOT pattern, motorists who regularly travel through this section will be safer in contrast to navigating a frequently changing series of lanes closures. Our plan accomplishes the Project work in two phases with only a single interim traffic switch between outside and inside work.*

# 4.6 PROPOSAL SCHEDULE



### 4.6.1 PROPOSAL SCHEDULE

The Myers Team's approach to the Project's design and construction provides a schedule advantage derived from our experience in eliminating learning curves, reducing risk of delays, and minimizing impacts to existing VDOT operations. Based on this approach, we have assembled schedule completion milestones that deliver several advantages to VDOT and the traveling public, including:

- Following Project Notice to Proceed on November 19, 2022, our Team will expedite investigation, design, and acquisition of Limited Notice to Commence Construction (LNCC) approval of the Phase 1 ITS & Sign Structure design package on August 19, 2023. Doing so allows us to expedite ITS construction, construction coordination with HRBT Segment 3, and relocation of existing ITS fiber and power facilities which conflict with existing bridge foundation elements along the corridor.
- Coupled with the Phase 1 ITS & Sign Structure LNCC, our Team will also expedite approval of Phase 1 MOT / TMP design and gain LNCC of these plans on August 26, 2023. With these plan approvals secured, our Team will initiate construction activities on the I-64 reversible managed lanes with the intent to **complete the managed lanes on or before June 19, 2024**. By completing the managed lanes early, our Team can implement our ATC #1, enabling work to begin on I-64 WB independently of the I-64 EB work.
- Following approval of the LNCC for the Final Roadway and Bridge plans on or before November 16, 2023, we begin work on I-64 EB with the intent of working on the outside roadway and bridge widening concurrently in Phase 1. Work will continue in Sections 1 and 2 of Phase 1. Once Phase 1 is complete, work will transition to Phase 2 (work on the inside portion of the roadway) independently within Sections 1 and 2 so that our Team can expedite completion of I-64 EB. Our current schedule shows that the Myers Team will be able to **open I-64 EB to traffic by October 21, 2025, thus opening the I-64 EB roadway to traffic approximately 7 weeks ahead of the contractual completion date**.
- Construction activities will continue concurrently for I-64 EB and I-64 WB to ensure that the Project is complete on or before December 15, 2025. This completion date includes the required 180 day ITS burn-in period which will be completed on or before December 12, 2025.

The Proposal Schedule, included in *Volume II*, uses Primavera software and critical path method scheduling to depict the scope and sequence of work to complete the Project per RFP requirements. A summary schedule, which depicts the longest path of the Project, is also provided. In addition to the PDF copy of the Proposed Schedule in *Volume II*, the source document in Primavera version 20.12 (.XER) is included with the Technical Proposal submission.

### 4.6.2 PROPOSAL SCHEDULE NARRATIVE

We have established several milestones to support and monitor the Myers Team's commitment to deliver the Project on time and comply with the contractual requirement of final Project completion on or before December 15, 2025. We will work continuously to identify and mitigate potential Project risks and manage the schedule with the intent of completing the Project early. *Figure 6.1* lists some key milestone dates extracted from our complete Project schedule.

*Figure 6.1: Key Milestones*

Milestone	Schedule Completion Date
Notice of Intent to Award	September 23, 2022
CTB Approval / Notice to Award	October 26, 2022
Design-Build Contract Execution	November 18, 2022
Notice to Proceed	November 19, 2022
VDOT Issues – Limited Notice to Commence Construction – Phase 1 ITS & Sign Structure Plans	August 19, 2023
VDOT Issues – Limited Notice to Commence Construction – Phase 1 TMP / MOT Plans	August 26, 2023
VDOT Issues – Limited Notice to Commence Construction – Phase 1 C&G / ESC Plans	October 13, 2023
VDOT Issues – Notice to Commence Construction – Roadway	November 14, 2023
Complete Managed Lanes	June 19, 2024
Complete EB Lanes – Phase 1	February 18, 2025

Perform ITS Level A Final Testing	May 11, 2025
Perform ITS Level B Final Testing	June 15, 2025
Complete WB Lanes – Phase 1	June 24, 2025
Complete EB Lanes – Phase 2	October 21, 2025
Complete WB Lanes – Phase 2	December 8, 2025
180-Day TSI Window	December 12, 2025
Project Closeout Complete	December 15, 2025
Final Completion – VDOT Issues C-5	December 15, 2025

**SEQUENCE OF WORK**

To achieve the Project milestones, our Team will proactively begin certain design phase activities following NTP:

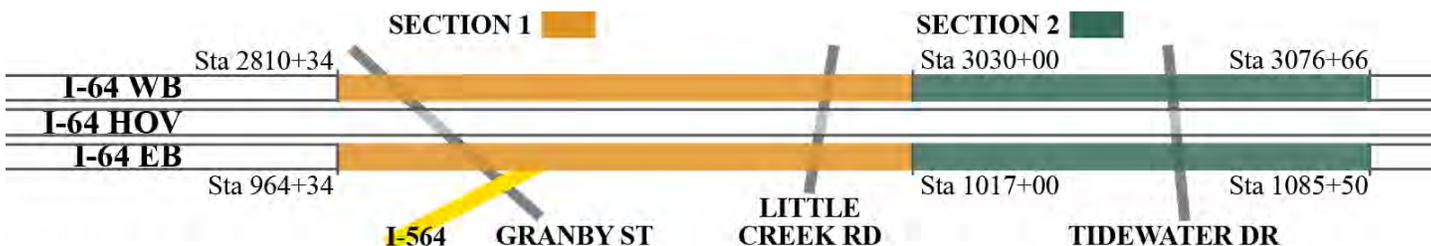
- Prepare Right of Way Acquisition Plan
- Prepare Baseline Schedule
- Prepare Quality Assurance / Quality Control Plan
- Prepare Public Involvement/Communications Plan
- Assess Existing Conditions Data – Identify Supplementary Data Needs
- Compile Geotechnical Information Base Map – Bridge Borings
- Compile Geotechnical Information Base Map – Roadway Borings
- DB Develop Stage I Bridge Plans – All Structures (Widenings and Rehabilitations)
- Perform Noise Analysis / Develop Initial Findings Report
- Develop Permit Impact Plates
- Schedule / Conduct Kick-off Meeting with VDOT Regional Utilities Office

After NTP, we will prioritize activities that support the design of the Phase 1 ITS & Sign Structure advanced plan package, the Phase 1 MOT/TMP plan, and the Phase 1 C&G / ESC Plan. These plan sets will be instrumental in progressing the construction of the I-64 reversible managed lanes which is on the Project critical path.

**SEQUENCING AND PHASING**

✓ The Myers Team’s plan proposes dividing the Project into two sections, as shown in *Figure 6.2*, to *provide smaller, more manageable areas in the two distinct construction phases to meet the traffic maintenance requirement and provide the greatest scheduling flexibility*. Guided by the goal of an early Final Completion, construction will be active in multiple Project sections during each phase.

*Figure 6.2: Project Sectioning*



We have developed the construction phasing based on a compilation of roadway and bridge construction needs; however, our assessment (reinforced by our Proposal Schedule) is that the Project’s critical path runs through the I-64 reversible managed lanes and then the I-64 WB lanes. Our construction phasing therefore focuses on expediting construction of the I-64 reversible managed lanes and opening these lanes to traffic so that we can implement our ATC #1. To prepare for construction activities, we include an advanced Phase 1 ITS and Sign Structure plan, an advanced Phase 1 MOT/TMP plan, and a Phase 1 C&G / ESC plan within the design phase and in advance of Phase 1 construction. We anticipate approval of these packages in the Summer / Fall of 2023. Work on the I-64 reversible managed lane will begin shortly after approval.

Our design approach supports as early a construction start as possible for the I-64 reversible managed lanes, including the Phase 1 ITS & Sign Structures plan approval package. As reflected in the Project critical path, design activities needed to start the requisite construction include property notification letter and distribution, supplemental topographic survey and compilation of a composite base map, and completion of the Phase 1 ITS & Sign Structure plan set.

Phase 1 construction of the I-64 EB lanes begins following final approval of roadway and Stage 2 bridge plans in the Fall of 2023, concurrently with the I-64 reversible managed lane construction. As noted in *Section 4.5.1* (Sequence of Construction), Phase 1 work includes the outside widening of I-64 EB roadway and bridges. When this work is completed, we transition to the Phase 2 work, construction of the inside improvements to I-64 EB.

✓ *This approach to the construction of the I-64 EB lanes allows this facility to open early, assuming all ITS work and burn-in periods have been satisfied.*

#### WORK BREAKDOWN STRUCTURE (WBS)

The proposal schedule is organized using a hierarchical WBS and is broken down by major scope of work as shown below. For design scope areas, the WBS further details major work efforts. For construction, the WBS is broken down first by construction phase and then by the geographical sections as shown in *Figure 6.2* and described in the sequence and phasing narrative of *Section 4.5.1*. The following represents the primary schedule WBS section and subsections used to develop the RFP level Project Schedule.

**Project Milestones:** The Project Milestones section includes key points in the Project schedule that form the basis for high-level schedule management and assist the Team in tracking, monitoring, and meeting our commitment to deliver the Project to VDOT and the traveling public on time or earlier than the stipulated Project Completion date of December 15, 2025.

**Project Administration:** The Project administration section includes activities related to the overall management of the Project and includes the following subsections of this WBS:

- **Project Startup:** Includes mobilization activities
- **Management Submittals:** Includes activities related to Project management submittals, such as the Project-Specific Safety & Hazardous Materials Management Plan, RW Acquisition Plan, and Environmental Management Plan
- **General Conditions:** Contains the activities for creating the initial Project Baseline schedule
- **Quality Assurance/Quality Control:** Tracks the submission and approval of the QA/QC Plan and progress of monthly QA/QC efforts, as well as activities for the required preparatory meetings
- **Project Closeout:** Includes punch list and as-built drawing submission activities

**Scope Validation Period:** The scope validation period is 120 days. This section includes activities related to the scope validation process, such as investigations, submittals, and negotiations, if necessary.

**Public Involvement:** The Public Involvement section includes activities related to Project interaction with the public and key Project stakeholders. This section also includes preparation and approval of the Design-Builder's Public Information Communication Plan, the Design-Builder's communication plan presentation to VDOT staff, and outreach strategies to be employed during the design and construction phases. It also includes distribution and tracking of property notification letters.

**Design:** The Design section includes activities related to the design efforts needed to develop and track notice to commence construction, including approved-for-construction plans. Subsections of this WBS are:

- **General Design Efforts:** Includes design support activities such as reviewing final contract requirements, finalizing and optimizing alternatives, and assessing additional data requirements that need to be obtained through additional field investigation, borings, and evaluations
- **Design Surveys:** Includes activities related to gathering additional data through field survey and investigations

- **Geotechnical:** Includes activities related to performing additional soil borings, laboratory analyses, geotechnical analysis, and design for the bridges and roadways
- **Advanced Roadway Plans:** Design plans required to accelerate Phase 1 construction. Includes the Phase 1 TMP / MOT, Phase 1 Clearing and Grubbing / Erosion & Sediment Control, Phase 1 ITS / Sign Structures, and the FI/RW Plans.
- **Final Roadway Plans:** Includes activities related to the preparation, submission, and approval of the AFC Roadway Plans, AFC TMP / MOT Plans, AFC Landscaping Plans, and the AFC Lighting/ITS/Signage Plans
- **Stage I and II Bridge Design Plans:** Development of initial and final bridge designs for I-64 EB over Granby St, I-564, Little Creek Rd, and Tidewater Dr, I-64 WB over Tidewater Dr, Granby Str and Little Creek Rd, and I-64 Managed Lanes over I-564 and Little Creek Rd
- **Final Design Noise Analysis Report:** Includes development and approval of the final design noise analysis report

**Permitting / Environmental:** The Permitting/Environmental section includes activities related to the obtaining necessary environmental permits for the Project and which represent a Hold Point in the Project schedule. The activities in this section are a conservative approach to the Project's environmental activities. Subsections of this WBS are:

- **VPDES:** Includes activities related to the preparation, submission, and issuance of the VPDES permit required prior to the commencement of land disturbing activities.
- **WUS Permit:** Includes activities related to preparing, submitting, and gaining approval of the individual WUS permit from USACE, VMRC, and DEQ
- **Pollution Prevention (P2) Plan:** Includes activities associated with the compilation, development, and acquisition of the Pollution Prevention plan
- **Stormwater Pollution Prevention Plan:** Includes activities associated with setting up and maintaining the SWPPP documentation as the design progresses

**Right-of-Way:** The RW section includes activities related to acquiring needed Right of Entry agreements and RW required to commence construction of the Project. Acquisition of RW is separated into five different RW packages, accounting for potentially 24 properties that may require RW acquisition and/or easements. Subsections of this WBS are:

- **Site Assessments/Survey/Research:** Includes activities related to site investigations and research for parcels potentially affected by the Project.
- **Appraisals:** Includes activities related to development of appraisals for parcels that are confirmed to be affected by the Project design
- **Negotiations / Clear for Construction:** Includes activities related to negotiating the purchase price of the parcel where necessary, and the closing or other acquisition process, whether through acquisition or condemnation.

**Utilities:** The Utilities section includes activities related to the efforts needed to relocate utilities in conflict with the final design. Each subsection below is broken down by utility owner and geographical section. Where the Team expects to find no conflicts with a particular utility, revisions to the utility WBS will be updated in a subsequent baseline submission. Subsections of this WBS are:

- **Utility Coordination/Planning:** Includes activities related to the early coordination and issuance of Master Utility Agreements
- **Utility Field Inspections:** Includes activities related to field investigations, development of the SUE drawing and test hole investigations, and utility relocation concept plans for each utility owner
- **Plan and Estimates:** Includes activities related to development and approval of Plan and Estimates and final utility relocations
- **Utility Relocation:** Includes activities related to construction of the utility relocation, completion of the UT-11's for inspection during construction, and submission of as-built documentation to VDOT

**Procurement:** The Procurement section includes activities related to relationships between Myers and its vendors and subcontractors. Subsections of this WBS are:

- **Vendor Procurement:** Includes activities related to procurement of materials vendors and subcontractors needed to construct the approved design. Some activities may not be necessary to represent procurement completion; rather, they provide adequate lead times between design and the start of construction
- **Construction Submittals:** Includes tracking pre-construction working drawings and show drawings for key long lead items
- **Fabrication:** Includes activities related to the lead times for major materials

**Construction:** The construction section includes activities related to constructing the approved design. This WBS section is broken down by phase, then by direction, then by section of roadway as shown below. Please note that all stationing and the WBS subsection are as follows:

- ✓ Pre-Construction
  - o I-64 EB
    - Section 1 – Sta 964+34 to Sta 1017+00
      - Roadway
    - Section 2 – Sta 1017+00 to Sta 1085+50
      - Roadway
  - o I-64 WB
    - Section 1 – Sta 2810+42 to Sta 3030+00
      - Roadway
    - Section 2 – Sta 3030+00 to Sta 3076+66
      - Roadway
- ✓ Phase 1
  - o I-64 EB
    - Section 1 – Sta 964+34 to Sta 1017+00
      - Traffic Control Measures
      - Erosion Control Measures
      - Roadway
      - Structures
      - ITS / Electrical / Signage
    - Section 2 – Sta 1017+00 to Sta 1085+50
      - Traffic Control Measures
      - Erosion Control Measures
      - Roadway
      - Structures
      - ITS / Electrical / Signage
  - o I-64 WB
    - Section 1 – Sta 2810+42 to Sta 3030+00
      - Traffic Control Measures
      - Erosion Control Measures
      - Roadway
      - Structures
      - ITS / Electrical / Signage

- Section 2 – Sta 3030+00 to Sta 3076+66
  - Traffic Control Measures
  - Erosion Control Measures
  - Roadway
  - Structures
  - ITS / Electrical / Signage
- o I-64 Managed Lanes
  - Section 1 – Sta 6002 to Sta 6023+04 / Sta 6031+23 to Sta 6059+10
    - Traffic Control Measures
    - Roadway
    - Structures
    - ITS / Electrical / Signage
  - Section 2 – Bridge over I-564 & Little Creek Rd
    - Traffic Control Measures
    - Erosion Control Measures
    - Roadway
    - Structures
- ✓ Phase 2
  - o I-64 EB
    - Section 1 – Sta 964+34 to Sta 1017+00
      - Traffic Control Measures
      - Erosion Control Measures
      - Roadway
      - Structures
      - ITS / Electrical / Signage
    - Section 2 – Sta 1017+00 to Sta 1085+50
      - Traffic Control Measures
      - Erosion Control Measures
      - Roadway
      - Structures
      - ITS / Electrical / Signage
  - o I-64 WB
    - Section 1 – Sta 2810+42 to Sta 3030+00
      - Traffic Control Measures
      - Erosion Control Measures
      - Roadway
      - Structures
      - ITS / Electrical / Signage
    - Section 2 – Sta 3030+00 to Sta 3076+66
      - Traffic Control Measures
      - Erosion Control Measures
      - Roadway
      - Structures
      - ITS / Electrical / Signage

### CRITICAL PATH

Per VDOT specifications, the critical path on the Project has been defined as the Longest Path. The determined longest path includes the following activities from the NTP (November 19, 2022) through Final Completion (December 15, 2025):

- Notice to Proceed
- Prepare / Approve / Distribute Property Owner Notification Letters
- Topographic Surveys
- Design and Approval of Phase 1 ITS and Sign Structure Plans
- Procurement of Signs
- Completion of I-64 WB managed lane
- Construction of I-64 reversible managed lane
- Completion of managed lanes
- I-64 WB Section 1 LT traffic and erosion control measures
- I-64 WB Section 1 LT earthwork and start of drainage
- Construction of walls 3A, 3B, and 3C Sta 202+05 Granby St Ramp A to Sta 2847+86 LT I-64 WB
- Completion of I-64 Section 1 LT roadway
- I-64 WB Section 1 RT traffic and erosion control measures
- Construction of I-64 WB RT roadway complete
- Mill and final surface asphalt I-64 WB Section 1 complete
- Complete final punch list and Project closeout
- Final Completion

### MEANS & METHODS

We calculated the durations in the Proposal Schedule based on estimated quantities known at the time of the proposal, as well as historical production averages experienced on similar projects. We review and monitor the construction schedule as design progresses and quantities are finalized. Any major modifications to the design or design quantities will be reviewed with VDOT and reflected in the potential revisions to the Project schedule.

✓ **Geotechnical Improvements:** As reflected by activities in the Proposal Schedule, our Team will perform geotechnical investigations and analysis to determine the most cost-effective and schedule-efficient method of stabilizing unsuitable soils. *Where possible, we plan to utilize an in-situ stabilization method. These methods are typically faster, providing schedule savings. In addition, in-situ stabilization will reduce/eliminate the need for on-road trucks to travel in and out of the work zone under traffic to dispose of the material, increasing safety for the Project and the traveling public.*

**Reviews and Approvals:** Discrete activities exist for preparation, submission, review and comment, and review and approve for each major deliverable in the schedule. To further clarify the reviewer's responsibility, R/C is used for Review/Comment while R/A is used for Review/Approve. Upon award, the Team will utilize the activity code C00117841DB111 "Responsible Stakeholder" to identify reviewing parties for each R/C and R/A activity. Known stakeholders with review and approval responsibilities include (but are not limited to) VDOT, the City of Hampton, and utility owners.

✓ **Subcontractors and Suppliers:** *Lessons learned from schedule management on previous design-build projects have led us to include a Procurement section in the Proposal Schedule.* This section of the WBS captures the activities needed to execute contracts with various subcontractors and suppliers once the design is submitted for approval. This section also contains activities for the fabrication and delivery of major materials that typically have longer lead times, such as precast drainage structures and sound wall panels.

**Resource Management:** We perform initial assessments of crew flow and allocation at a high level to make sure the Project will face no major resource challenges and so that our Team can be confident that the schedule is

achievable. Post-award, Primavera's role and resource functions may be used to monitor and track the number of self-perform and subcontract resources needed in the construction phase of the Project.

Before the procurement phase, we allocate resources to show what types of subcontractors and suppliers are needed for each construction activity. Once we procure a specific vendor for that activity, we assign an activity code to represent the specific firm procured. For example, a bridge activity would assign the resource "Bridge Contractor" pre-procurement. Post procurement, the activity would be assigned a specific activity code with the firm's name, "ABC Structural Company". These assignments allow the procurement and construction management staff to strategically plan with all resource availability considerations in mind. This also helps differentiate between work being self-performed by the Team and work being performed by others.

### SCHEDULE ASSUMPTIONS

To properly manage the Project schedule, we must understand the scope of work and interdisciplinary dependencies. Furthermore, we must understand the technical capabilities of the schedule management software. Care has been given to set up of the Primavera Schedule to ease future schedule management and to properly account for schedule risks to reduce potential impacts.

**Calendars:** Project-specific calendars have been set up in Primavera to represent various restrictions and assumptions that must be applied to the Project activities.

- ✓ C00117841DB111 - 5-Day Office Calendar
  - o This calendar allows work five days per week, except standard state holidays.
  - o This is assigned to all preconstruction activities that are not dependent on weather and would be primarily performed in an office.
- ✓ C00117841DB111 - 5-Day Field Calendar
  - o This calendar allows for work five days per week except for standard state holidays. It also incorporates normal weather patterns that would affect field activities, such as precipitation histories.
  - o This is assigned to all field activities that may be affected by weather or precipitation events.
- ✓ C00117841DB111 - Paving Calendar
  - o This calendar allows work for five days per week except for standard state holidays. In addition to accounting for normal weather patterns, as shown in the "5-Day Field" calendar, it does not allow any work between December 15 of each year and March 1 of the next year.
  - o This is assigned to all permanent paving activities.
- ✓ C00117841DB111 - 7-Day Calendar
  - o This calendar allows work seven days per week.
  - o This is assigned to cure activities and any activity for which the duration is based on calendar days, such as review activities. It is also used on each of the activities needed for the managed lane 21-day shutdown.
- ✓ C00117841DB111 - Clearing Calendar
  - o This allows for work five days per week except for standard state holidays. In addition to accounting for normal weather patterns, as shown in the "5-Day Field" calendar, it does not allow any work between April 2 and November 13 of each year.
  - o This is assigned to all clearing and grubbing activities.

**Consistent Activity Names and IDs:** We have taken care to maintain consistency in each activity’s name and ID throughout the Proposal Schedule. Each Activity ID is twelve digits long. The first six to ten digits mirror the WBS code in which the activity is located. Likewise, activities of similar type follow a consistent naming convention. Activities for installing asphalt, for example, are consistently named “Place Asphalt” throughout the schedule rather than “Install Asphalt” in one location or “Place Pavement” in another. In addition, activities that are duplicative in multiple areas of the Proposal Schedule have a suffix for the specific and applicable segment, phase, and detail.

**Activity Codes:** Project-specific activity codes have not yet been established. However, the baseline schedule will contain activity codes representing such items as phase, segment of the Project, specific areas within each segment, type of work, and responsible party. This will allow us to create custom filters and layouts to better communicate various aspects of the Project Schedule to different stakeholders and contributors.

**Schedule Risk and Management:** Several sections of the Proposal schedule do not yet have adequate information to thoroughly define schedule activities at a Baseline Schedule level of detail. In these areas, our Team has drawn from previous DB experience to build a schedule that minimizes the risk of future impact once additional details are known. Examples of known risk areas and risk minimization measures include:

- **Plan Packaging:** The Proposed Schedule shows the design packages broken down by priority of work needed for construction. Construction staff have worked with the designers to define Advanced Work Packages (AWPs) that will allow an accelerated start to construction with low risk of future rework due to design progression. Key AWP’s which have been identified in the Project schedule include:
  - ✓ Phase 1 ITS & Sign Structure Plans
  - ✓ Phase 1 MOT / TMP Plans
  - ✓ Phase 1 C&G / Erosion and Sediment Control Plans
- **Plan Reviews:** Almost every design submittal in the Proposal Schedule includes two VDOT review cycles. Our collaborative approach to resolving comments should allow substantial time to approve plans.
- **Utility Relocations:** All potential conflicts known at the time of submission of the *Volume 2 Plans* are shown to be relocated in the Proposal Schedule. The Team will continue to strive to minimize or eliminate conflicts such that relocations shown in the schedule may not be necessary—allowing construction to advance earlier than projected in the Proposal schedule.

Upon NTP, the Team will cost load the first three months of the Proposal Schedule and make any modifications necessary to meet the Contract Requirements for Preliminary Schedule, updating any areas where additional information is known. As design progresses following submission of the Preliminary Schedule, our Team may break down some areas to the high level of detail necessary to properly manage the Project’s baseline schedule.

✓ *This breakdown will allow better resource management and more accurate progress monitoring.*

The CPM Schedule will be the driving force behind all long-term and short-term planning efforts. Design work and other preconstruction activities will be closely monitored with the schedule. A formal CPM schedule update will be submitted monthly to VDOT and distributed to the appropriate Project Stakeholders, as requested.

# APPENDIX 4.0.1.1 TECHNICAL PROPOSAL CHECKLIST



**ATTACHMENT 4.0.1.1**

**HREL Segment 1A**

**TECHNICAL PROPOSAL CHECKLIST AND CONTENTS**

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

<b>Technical Proposal Component</b>	<b>Form (if any)</b>	<b>RFP Part 1 Cross Reference</b>	<b>Included within page limit?</b>	<b>Technical Proposal Page Reference</b>
<b>Technical Proposal Checklist and Contents</b>	Attachment 4.0.1.1	Section 4.0.1.1	no	Appendix 4.0.1.1
<b>Acknowledgement of RFP, Revisions, and/or Addenda</b>	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	Appendix 3.6
<b>Letter of Submittal</b>	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
Final Completion Date	NA	Section 4.1.6	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.8	no	Appendix 4.1.8
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.9	no	Appendix 4.0.1.1
<b>Offeror's Qualifications</b>	NA	Section 4.2		2

**ATTACHMENT 4.0.1.1**

**HREL Segment 1A**

**TECHNICAL PROPOSAL CHECKLIST AND CONTENTS**

<b>Technical Proposal Component</b>	<b>Form (if any)</b>	<b>RFP Part 1 Cross Reference</b>	<b>Included within page limit?</b>	<b>Technical Proposal Page Reference</b>
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 identified Including addition of the Environmental Compliance Manager and the Contractor Incident Management Coordinator	NA	Section 4.2.1	yes	2
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.1	yes	2
<b>Design Concept</b>	NA	Section 4.3		3-18
Conceptual Roadway Plans and description	NA	Section 4.3.1	yes	3-10
Conceptual Structural Plans and description	NA	Section 4.3.2	yes	11-18
<b>Project Approach</b>	NA	Section 4.4		19-33
Environmental Management	NA	Section 4.4.1	yes	19-21
Utilities	NA	Section 4.4.2	yes	21-28
Geotechnical	NA	Section 4.4.3	yes	28-30
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	30-33
<b>Construction of Project</b>	NA	Section 4.5		34-50

**ATTACHMENT 4.0.1.1**

**HREL Segment 1A**

**TECHNICAL PROPOSAL CHECKLIST AND CONTENTS**

<b>Technical Proposal Component</b>	<b>Form (if any)</b>	<b>RFP Part 1 Cross Reference</b>	<b>Included within page limit?</b>	<b>Technical Proposal Page Reference</b>
Sequence of Construction	NA	Section 4.5.1	yes	34-44
Transportation Management Plan	NA	Section 4.5.2	yes	44-50
<b>Disadvantaged Business Enterprises (DBE)</b>	NA	Section 4.1.10		1
Written statement of percent DBE participation	NA	Section 4.1.10	yes	1
<b>Proposal Schedule</b>	NA	Section 4.6		S-1 - S10
Proposal Schedule	NA	Section 4.6	no	Volume II
Proposal Schedule Narrative	NA	Section 4.6	no	S-1-S-9
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.6	no	Attached

# APPENDIX 3.6 FORM C-78-RFP



**ATTACHMENT 3.76****COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF TRANSPORTATION**

RFP NO. C00117840DB112  
 PROJECT NO.: 0064-122-470

**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 3.76, 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 RFP – April 28, 2022  
(Date)
2. Cover letter of Addendum #1- May 27, 2022  
(Date)
3. Cover letter of Addendum #2- June 17, 2022  
(Date)
4. Cover letter of Addendum #3- July 13, 2022  
(Date)
5. Cover letter of Addendum #4- August 2, 2022  
(Date)

SIGNATURE

DATE

PRINTED NAME

TITLE

# APPENDIX 4.1.8 PROPOSAL PAYMENT AGREEMENT



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

**THIS PROPOSAL PAYMENT AGREEMENT** (this “Agreement”) is made and entered into as of this \_\_\_\_ day of \_\_\_\_\_, 20 \_\_, by and between the Virginia Department of Transportation (“VDOT”), and \_\_\_\_\_ (“Offeror”).

**WITNESSETH:**

**WHEREAS**, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”) pursuant to VDOT’s January 20, 2022 (last addendum February 10, 2022) 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 1A, Project No. 0064-122-470** (“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 **One Hundred Seventeen Thousand and 00/100 Dollars (\$117,000.00)** ("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: \_\_\_\_\_

*[Insert Offeror's Name]*

By:  \_\_\_\_\_

Name: Aaron T. Myers

Title: Executive Vice President

# APPENDIX 4.2.1 RESUMES FOR DEPUTY KEY PERSONNEL



## ATTACHMENT 4.2.1

### DEPUTY KEY PERSONNEL RESUME FORM

<b>Brief Resume of Key Personnel anticipated for the Project.</b>
a. Name & Title: <b>Jonathan Holt, Regional Operations Manager</b>
b. Project Assignment: <b>Deputy Design-Build Project Manager</b>
c. Name of the Firm with which you are employed at the time of submitting Technical Proposal: <b>Allan Myers</b>
d. Employment History: With this Firm <b>10</b> Years With Other Firms <b>20</b> Years Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project-specific experience shall be included in Section (g) below): <b>Allan Myers, Regional Operations Manager &amp; Project Executive (2015-present):</b> Operational oversight of all regional construction projects with a focus on large, highly complex infrastructure projects delivered by joint venture design-build teams. Manage all aspects of projects, including planning and scheduling, coordination with owners / designers / other stakeholders, public outreach, and quality / safety / schedule / budget oversight. Proven record delivering safe projects on time on expedited construction schedules across the Mid-Atlantic region, including the Hampton Roads area. Board Member of Hampton Roads Utility and Heavy Contractors Association since 2017 (President, 2019). <b>Allan Myers, Senior Project Manager (2011-2015):</b> Project management and oversight of several heavy civil construction projects, delivering successful outcomes on time and on budget. Oversaw several key departments to support construction efforts in the Hampton Road region including procurement, schedule, DBE/SWaM, document control, and pre-construction. <b>Schiavone Construction Company, Senior Project Manager/Project Manager (1992-2011):</b> Project Manager/Senior Project Manager responsible for oversight and quality control for complex civil infrastructure projects in New York City for projects ranging up to \$300M in size and award-winning design-build projects.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: Fairleigh Dickinson University, Teaneck, New Jersey / BS / 1992 / Construction Engineering Technology State University of New York at Delhi / AAS / 1989 / Construction Technology
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2014/VDOT Erosion & Sediment Control Contractor Certification Program (ESCCC)/#2-00119 2015/Virginia DEQ RLD Certification/#RLD01585 2014/VDOT Basic Work Zone Traffic Control Training and Flagger Certification/#061114010
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> <b>(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.</b>
<b><u>VDOT RTE 58 (LASKIN RD) RECONSTRUCTION (\$81M), VIRGINIA BEACH, VA</u></b>
<b>Firm:</b> Allan Myers <b>Role:</b> Regional Operations Manager <b>Date:</b> 09/2019 - 12/2022
<b>Project Description:</b> Smart-scale road reconstruction of Rte 58 from First Colonial Rd to Birdneck Rd for approx. 2 miles. Reconstruction and reconfiguration of the roadway within the existing footprint, from two mainline lanes in each direction with adjacent service roads to three lanes in each direction. The project replaces the existing bridge over Linkhorn Bay, to meet the new design flood elevation and includes raising the roadway as much as three feet. This imposes challenges with respect to maintenance of traffic during phased construction. The scope of work also includes upgrade of six signalized intersections along the corridor and extensive underground utility work consisting of over 60,000 LF of sanitary, storm, water, and HRSD force main piping.
<b>Similarities:</b> On this complex roadway reconstruction and bridge replacement project, less than 20 miles from the I-64 1A Project area, Jon applied his experience in the VDOT Hampton Roads District in service as Regional Operations Manager. He directed a phased approach to the reconstruction and widening of the Rte 58 roadway and bridge, navigating stormwater and environmental management, overcoming geotechnical challenges in poor soils and use of lightweight

aggregate, and carefully planned and executed MOT that phased construction while maintaining traffic and access to businesses and homes along the corridor. In his role as Regional Operations Manager, Jon built relationships and coordinated directly with the same and similar project stakeholders to the I-64 1A effort, including public and private utilities, local residents and businesses, and regional environmental agencies.

**Impact on the Project:** Jon provided oversight of the project construction team and had direct impact on delivering quality, coordinating with VDOT and stakeholders to minimize risks, and solving the challenges posed by the sensitive local environment and geotechnical composition of the region. He forged relationships with local project stakeholders including HRSD, Virginia Natural Gas, Dominion Energy, Verizon, Cox, and VBS. He has guided the construction team in successfully maintaining access for area residents and businesses while making room for the project improvements. The project abuts Linkhorn Bay, a sensitive environmental area that drains to the ocean. With Jon's leadership, the team developed cofferdams and turbidity curtains as solutions for the phased bridge reconstruction work.

#### **NEWTOWN CREEK WATER POLLUTION CONTROL PLANT UPGRADE (\$300M), GREENPOINT, NY**

**Firm:** Schiavone Construction      **Role:** Senior Project Manager      **Date:** 06/2009 - 07/2011

**Project Description:** Excavation and shoring; 50,000 cy of reinforced concrete; 1490 tons of structural steel; 120,000 lf of steel H-pile supported drainage and plant process piping; and specialty process equipment for this key element of New York City's transformation of its largest wastewater plant into one of the nation's largest treatment facilities, serving more than one million people with a capacity of up to 700 million gallons per day.

**Similarities:** Jon served as Senior Project Manager for this large-scale, complex, civil construction project. Through his leadership, Jon's team completed work ahead of the project's ambitious schedule while contending with contaminated soil & groundwater, significant utility coordination requirements inherent to the project's scope, and limited space constraints associated with construction.

**Impact on the Project:** Jon assembled, developed, and led several trade disciplines and over 400 employees in one cohesive, highly functioning team. He met several project management challenges, including the need for extensive environmental monitoring to conform to rigid requirements, a project schedule driven by a heavily reinforced concrete structure laden with process piping embedments and structural steel, and a congested site demanding thoughtful planning and precise execution. Facing a 44-month schedule, five interim milestones, and damage provisions totaling over \$8M, Jon's team earned the full incentive for achieving early completion of all milestones.

#### **NYCTA FAN PLANT REPLACEMENT AT 30<sup>TH</sup> ST AND 6<sup>TH</sup> AVE (\$65M), NEW YORK, NY**

**Firm:** Schiavone Construction      **Role:** Project Manager      **Date:** 05/2007 - 12/2009

**Project Description:** Emergency ventilation for a 30-block section along the 6<sup>th</sup> Ave subway line, serving four separate tracks in mid-town Manhattan. Replacement of two existing fan plants with one new, larger, state-of-the-art facility constructed under the intersection of 6<sup>th</sup> Avenue and 30<sup>th</sup> Street in Mid-town Manhattan. Work was completed in an extremely congested urban area while minimizing impacts to the public.

**Similarities:** Jon served as Project Manager for this large-scale, complex, civil transportation construction design-build effort. Jon led the team as it navigated complex TMP and MOT requirements, geotechnical constraints, significant utility relocation and coordination, and full-depth roadway reconstruction. He coordinated the many specialized trades demanded by the project as well as the owner.

**Impact on the Project:** Serving as Project Manager, Jon had full oversight and accountability for the successful delivery of the project. His leadership of in-house temporary structures design and the construction team ensured that the heavy vehicular and pedestrian traffic would be maintained by way of a temporary steel decking system, allowing access from above during night-time limited lane closures. Utility congestion in the project area demanded extensive relocations and support from the temporary decking system to allow excavation below to advance. With Jon's management of diverse tradespeople operating in multiple shifts, the team completed the final restoration of the roadway and utilities in the first 28 months of the 45-month schedule, with final completion in just 36 months (a schedule savings of 20%).

## ATTACHMENT 4.2.1

### DEPUTY KEY PERSONNEL RESUME FORM

<b>Brief Resume of Key Personnel anticipated for the Project.</b>		
a. Name & Title: <b>Gail Kuttesch, PE, Associate</b>		
b. Project Assignment: <b>Deputy Design Manager</b>		
c. Name of the Firm with which you are employed at the time of submitting Technical Proposal: <b>Whitman, Requardt &amp; Associates, LLP (WRA)</b>		
d. Employment History: With this Firm <u>12</u> Years With Other Firms <u>6</u> Years Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below):		
<p><b>Whitman, Requardt &amp; Associates, LLP (WRA), Associate/Senior Project Engineer (2010-present):</b> Gail has served as a senior project engineer for major VDOT design projects continuously since September 2010. She specializes in the design of complex projects requiring a multi-discipline design team. As senior project engineer and a design manager/deputy design manager on VDOT design-build (DB) projects, Gail is responsible for the complete design efforts, including interchange, roadway, bridge, retaining walls, H&amp;H, traffic engineering, utility relocation, environmental compliance, and right-of-way (ROW) coordination. She is responsible for establishing and overseeing a QA/QC program for all pertinent disciplines involved in the design of the project, including the review of design, working plans, shop drawings, specifications, and constructability. She is responsible for coordinating the individual design disciplines and ensuring the overall project design conforms with the contract documents. She also coordinates engineering design tasks and shop drawing submissions as well as RFIs.</p> <p><b>URS Corporation (URS), Project Engineer/Design Engineer (2004 –2010):</b> As a project engineer on numerous projects, Gail was responsible for roadway design efforts. including the development of horizontal and vertical alignments, grading, cross sections, typical sections, environmental impacts, construction cost estimates, superelevation, and earthwork. Additionally, she managed task assignments, coordinated with subconsultants and clients, and she worked in all aspects of highway design in both design-bid-build and DB projects. Projects included roundabout improvements, shared-use trail design, intersection design, and interstate/interchange improvements.</p>		
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: Virginia Polytechnic Institute and State University, Blacksburg, Virginia / BS / 2003 / Civil Engineering		
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2010 / Professional Engineer – Virginia / 0402048119		
g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none"><li>1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i></li><li>2. <i>Note whether experience is with current firm or with other firm.</i></li><li>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i></li></ol> <p><b>(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.</b></p>		
<b>VDOT I-64 WIDENING EXIT 200 – 205 DB (\$47.9M), HENRICO AND NEW KENT COUNTIES, VA</b>		
<b>Firm:</b> WRA	<b>Role:</b> Deputy Design Manager	<b>Date:</b> 03/2017 – 09/2019
<b>Project Description:</b> The project included the widening of I-64 from four to six lanes and the design, repair, and widening of two, four-span, 280-ft long existing bridges over the Chickahominy River. The design modified the crown point, which required coordination and special detailing as well as construction support, such as shop drawings and RFIs. The project goal was to alleviate congestion throughout a corridor of I-64 by creating additional traffic capacity and provide ITS improvements throughout the project limits.		

**Similarities:** This widening was, like the Segment 1A Project, a major VDOT DB project on I-64. And like the Segment 1A Project, this effort included extensive traffic control, roadway, ITS, hydraulics, ROW acquisition, signing and pavement markings, SWM, erosion and sediment controls, retaining walls, sound barriers, permits, bridges, geotechnical, public relations, QA/QC, and utility relocations. As Deputy Design Manager for this project, Gail worked in precisely the same role as her proposed assignment for Segment 1A.

**Impact on the Project:** As deputy design manager, Gail was responsible for WRA's design for this widening project along I-64 with a major focus ensuring the proposed design effectively utilized the existing pavement cross slopes and elevations to minimize cost. These improvements include the widening of I-64, strengthening of outside shoulders, widening/repair of two bridges (eastbound and westbound) over the Chickahominy River, and over a mile of sound barriers. Gail had a lead role in establishing and facilitating the QA/QC program for all disciplines and ensuring the design was in conformance with the contract documents.

#### **VDOT I-95 SAFETY IMPROVEMENTS AT ROUTE 3 DB (\$21M), FREDERICKSBURG, VA**

**Firm:** WRA

**Role:** Design Manager

**Date:** 09/2016 – 11/2018

**Project Description:** This project included safety and operations improvements at the I-95 interchange at Rte 3 and the addition of a sound barrier wall along northbound I-95 from Cowan Blvd to Fall Hill Ave. These improvements included modifications to three ramps, the addition of two signals, and the modification of the intersection of Rte 3 with Carl D. Silver Pkwy. The northbound entrance ramp improvements provided an auxiliary lane for 3,000 feet along I-95.

**Similarities:** Gail served as the full design manager on this VDOT DB project. This effort was a major civil transportation improvements project with several similar scope elements to Segment 1A, including extensive traffic control, mass excavation, survey, roadway, hydraulics, ITS, ROW acquisitions, signing and pavement markings, SWM, erosion and sediment control, retaining walls, sound barrier, permits, and utility relocations.

**Impact on the Project:** Gail lead the design efforts to improve traffic operation at the southbound exit ramp to Rte 3 and Carl D. Silver Parkway and developed a special design retaining wall to eliminate right of way/limited access impacts on commercial properties. She responsible for the project's design and overseeing design elements including roadway, hydraulic, right of way acquisitions, box culvert, CCTV camera installation, signing and pavement markings, stormwater management, maintenance of traffic, erosion and sediment control, retaining wall, sound barrier wall, lighting, permits, public involvement, QA/QC, coordination during construction, and utility relocations.

#### **VDOT FALL HILL AVE WIDENING DB (\$30.8M), FREDERICKSBURG, VA**

**Firm:** WRA

**Role:** Deputy Design Manager

**Date:** 03/2014 – 01/2017

**Project Description:** This project included the widening of Fall Hill Ave from the existing two to four lanes with a raised median from Carl D. Silver Pkwy to a roundabout just west of the bridge over the Rappahannock Canal. Mary Washington Blvd was extended to the roundabout to provide a new connection between Jefferson Davis Hwy and Fall Hill Ave. The existing bridge over I-95 was replaced with a four-lane divided roadway section with pedestrian facilities on both sides.

**Similarities:** This major VDOT DB project shares several similarities with Segment 1A, including extensive traffic control (on I-95), hydraulics, ROW acquisition, signing and pavement markings, SWM, erosion and sediment control, retaining walls, environmental (4(f) coordination), sound barrier, bridge, and utility relocations. The utility impacts included relocating two Dominion Energy transmission poles and the coordination of a 2,000 ft parallel encroachment of the transmission line easement. As Deputy Design Manager for this project, Gail worked in precisely the same role as her assignment for Segment 1A.

**Impact on the Project:** Gail led the development of design efforts to minimize impacts to the Dominion Energy transmissions lines, which allowed Mary Washington Blvd to be partially located in the utility easement. She was responsible for WRA's roadway design and design submissions for this widening and reconstruction project of 2.2 miles of Fall Hill Ave and Mary Washington Blvd. This design included a roundabout at the intersection, roadway consisting of a four-lane divided curb and gutter section with a sidewalk on the south side, and a shared-use path on the north side. Gail coordinated design elements including roadway, hydraulic, SWM, bridge, retaining walls, sound barriers, utility relocation and coordination, traffic engineering, lighting, environmental coordination of permits, public involvement, ROW acquisition, and park design.

# APPENDIX 3.6.7 LIST OF APPROVED ATCs



**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	Temporary utilization of WB HOT Express Lane as I-64 General Purpose Lane	July 27, 2022	Vol. I, 3, 4, 9, 12, 14, 34, 39, 43, 46, 47, 50 Vol. II, 57-61
ATC #2	Trench Drain detail modifications	July 27, 2022	Vol. I, 3, 4, 6, 34 Vol. II, 58-60

**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]

Aaron T. Myers  
 [Printed Name]

Executive Vice President  
 [Title]

DATE: 8/16/22

# APPENDIX 4.1.9 DEBARMENT FORMS



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

**Project No.: 0064-122-470**

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

8/10/2022  
\_\_\_\_\_  
Date

Executive Vice President  
\_\_\_\_\_  
Title

Allan Myers VA, Inc.  
\_\_\_\_\_  
Name of Firm

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

**Project No.: 0064-122-470**

- 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

August 11, 2022  
Date

Partner  
Title

Whitman, Requardt & Associates, LLP  
Name of Firm

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

**Project No.: 0064-122-470**

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.

	8/10/2022	President
Signature	Date	Title

Quinn Consulting Services, Inc.  
Name of Firm

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

**Project No.: 0064-122-470**

- 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

Date 8/10/22

Thomas G. McLinden, President

Title

Aldridge Electric, Inc.

Name of Firm

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

**Project No.: 0064-122-470**

- 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.



8/10/2022

Executive Vice President

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

Bowman Consulting Group Ltd.

\_\_\_\_\_  
Name of Firm



12500 Fair Lakes Circle #150  
Fairfax, VA 22033  
703-502-7500



11100 Endeavor Ct  
Manassas, VA 20109  
703-368-7373



Submitted to: **VDOT**  
Virginia Department of Transportation

# TECHNICAL PROPOSAL VOLUME II

A DESIGN-BUILD PROJECT

August 15, 2022

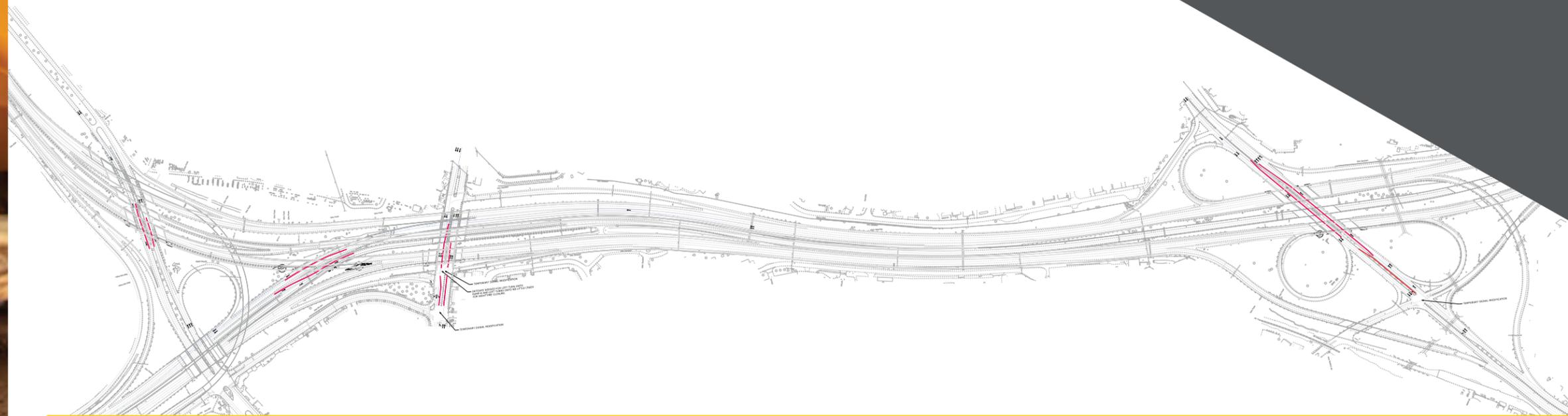
**I-64 HAMPTON ROADS EXPRESS LANES (HREL) SEGMENT 1A**  
From: 0.150 miles East of Patrol Road  
To: 0.673 miles East of Tidewater Drive

**CITY OF NORFOLK, VIRGINIA**

State Project No.: 0064-122-470

Federal Project No.: NHPP-064-3(520)

Contract ID Number: C00117840DB112



I-64 HREL TECHNICAL PROPOSAL VOLUME II  
DESIGN CONCEPT GRAPHICS



Submitted by:



+



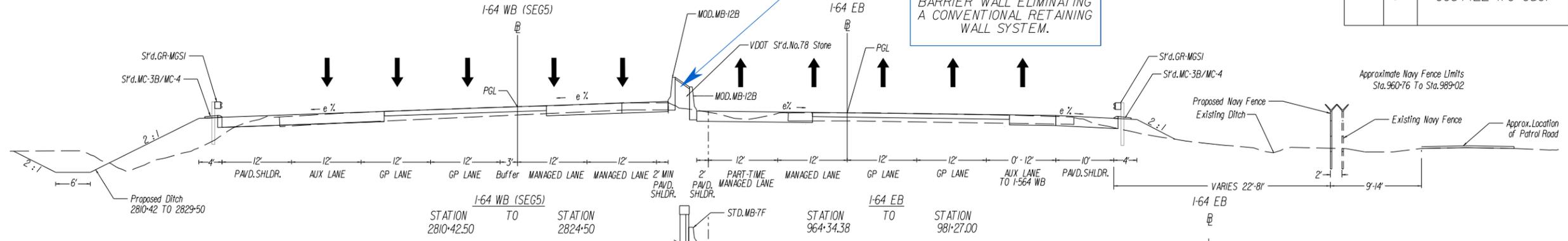
# TYPICAL SECTIONS

## DESIGN ENHANCEMENT

INCORPORATED A MODIFIED BARRIER WALL ELIMINATING A CONVENTIONAL RETAINING WALL SYSTEM.

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VA.	64	0064-122-470 C501	2A(1)

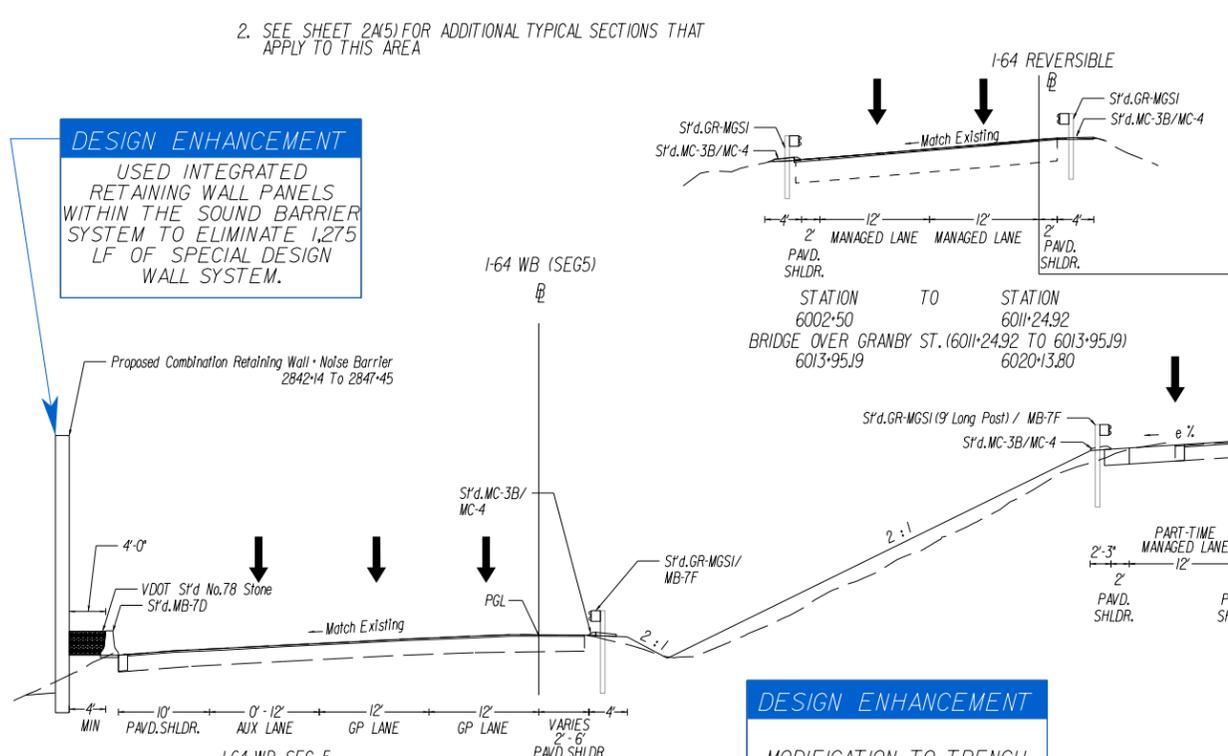
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2. SEE SHEET 2A(5) FOR ADDITIONAL TYPICAL SECTIONS THAT APPLY TO THIS AREA

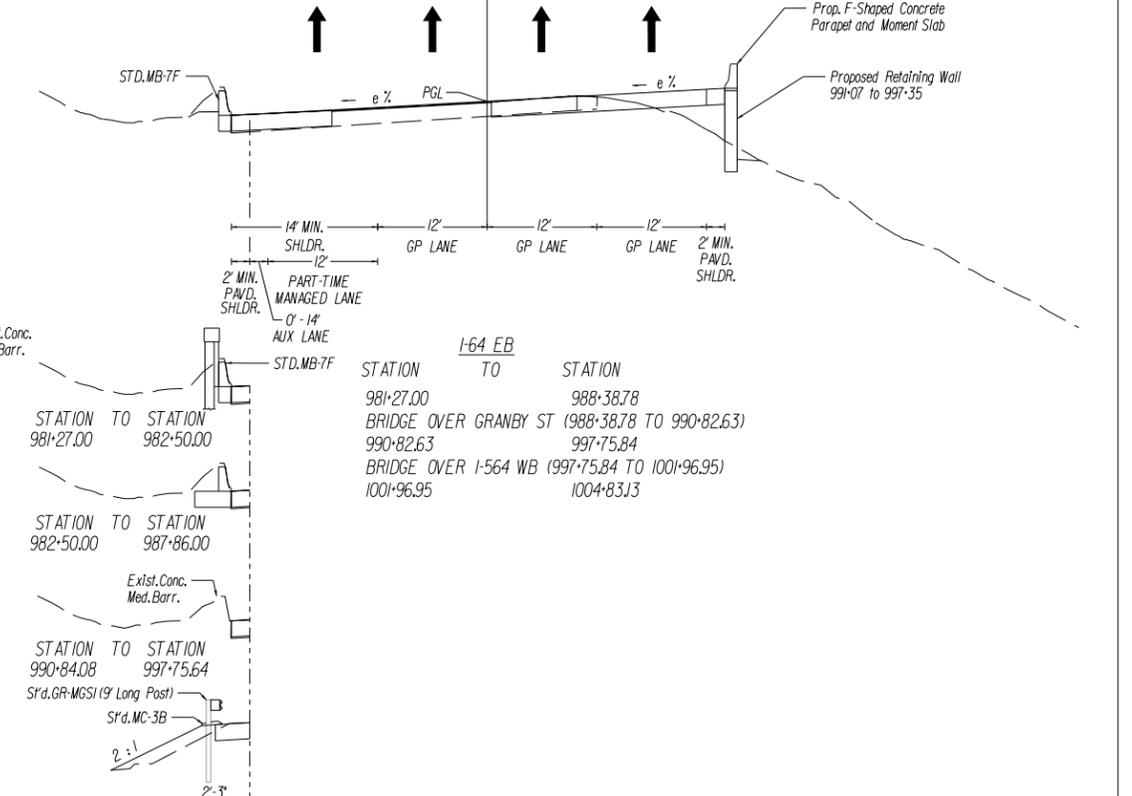
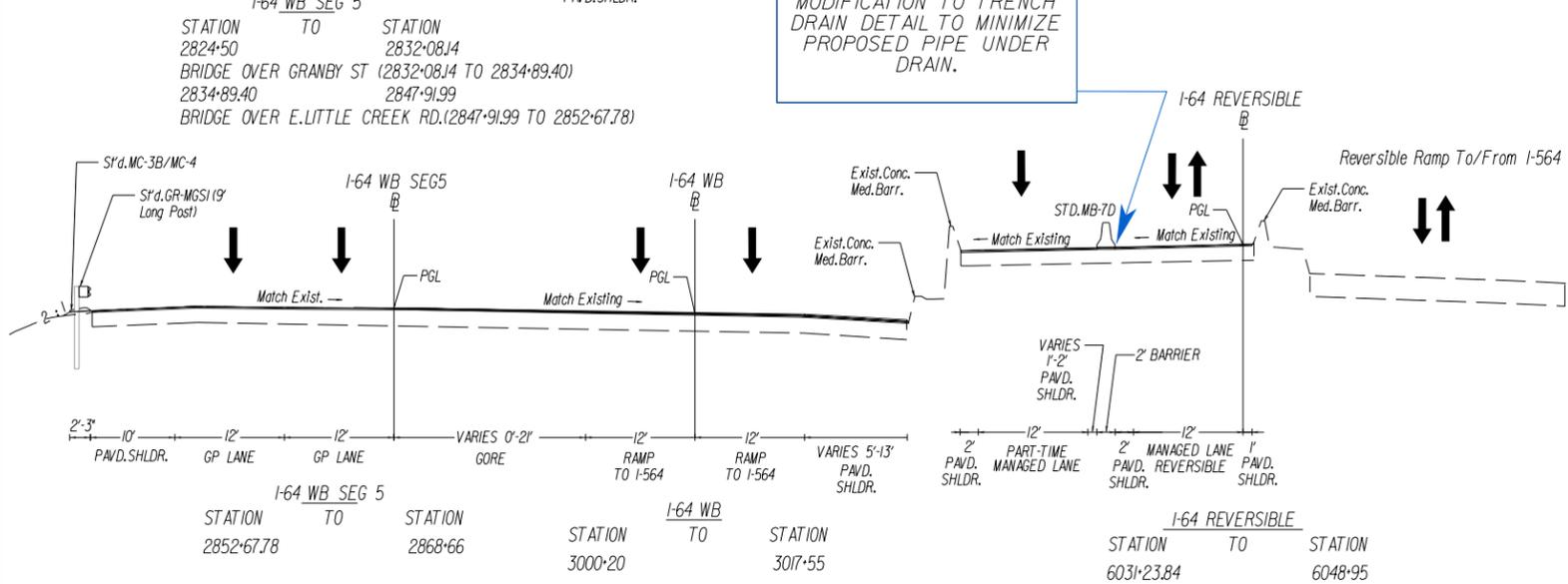
## DESIGN ENHANCEMENT

USED INTEGRATED RETAINING WALL PANELS WITHIN THE SOUND BARRIER SYSTEM TO ELIMINATE 1,275 LF OF SPECIAL DESIGN WALL SYSTEM.



## DESIGN ENHANCEMENT

MODIFICATION TO TRENCH DRAIN DETAIL TO MINIMIZE PROPOSED PIPE UNDER DRAIN.

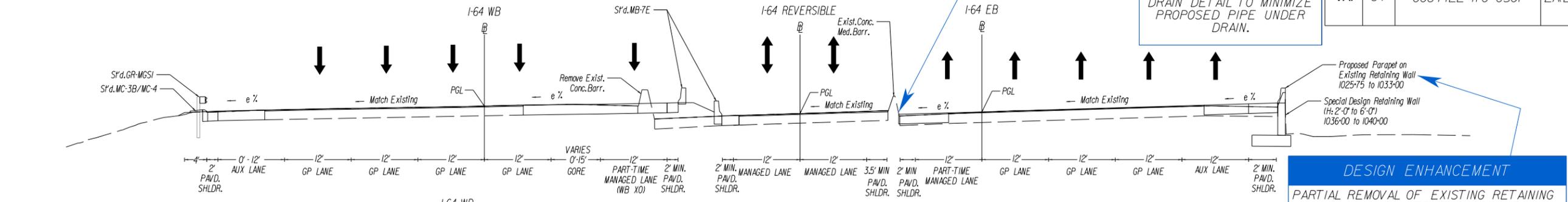


# TYPICAL SECTIONS

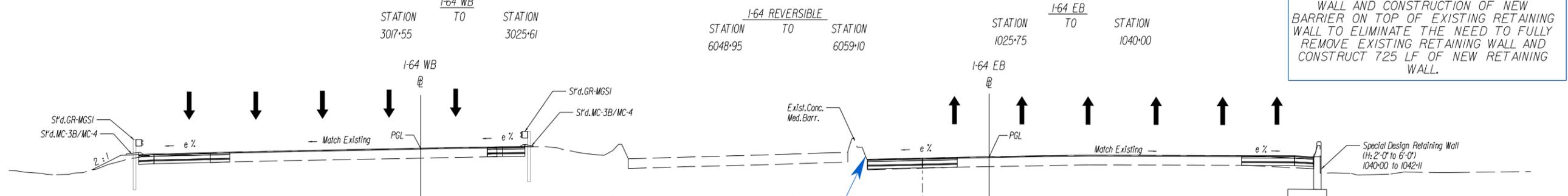
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**DESIGN ENHANCEMENT**  
MODIFICATION TO TRENCH DRAIN DETAIL TO MINIMIZE PROPOSED PIPE UNDER DRAIN.

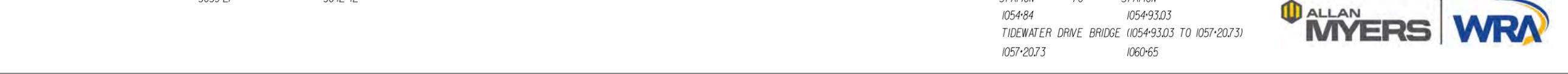
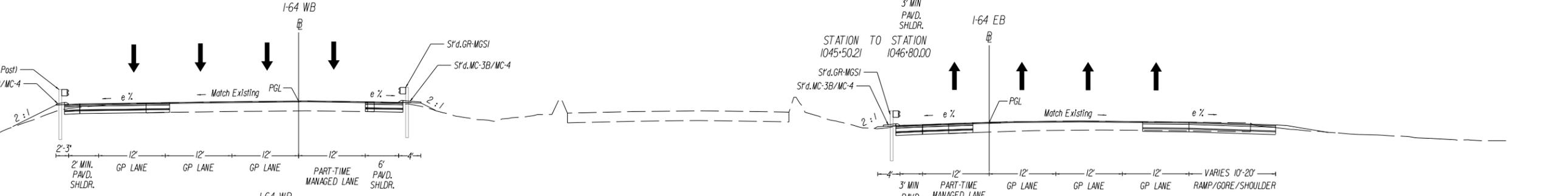
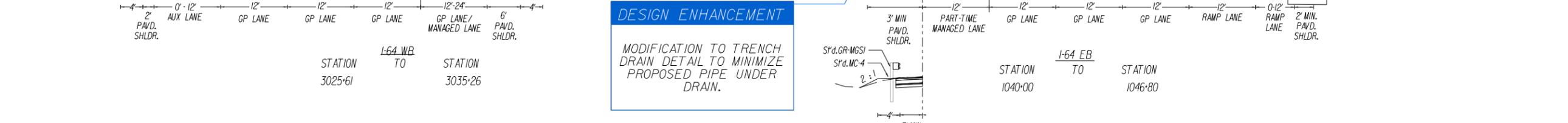
STATE	ROUTE	STATE	PROJECT	SHEET NO.
VA.	64		0064-122-470 C501	2A(2)



**DESIGN ENHANCEMENT**  
PARTIAL REMOVAL OF EXISTING RETAINING WALL AND CONSTRUCTION OF NEW BARRIER ON TOP OF EXISTING RETAINING WALL TO ELIMINATE THE NEED TO FULLY REMOVE EXISTING RETAINING WALL AND CONSTRUCT 725 LF OF NEW RETAINING WALL.



**DESIGN ENHANCEMENT**  
MODIFICATION TO TRENCH DRAIN DETAIL TO MINIMIZE PROPOSED PIPE UNDER DRAIN.



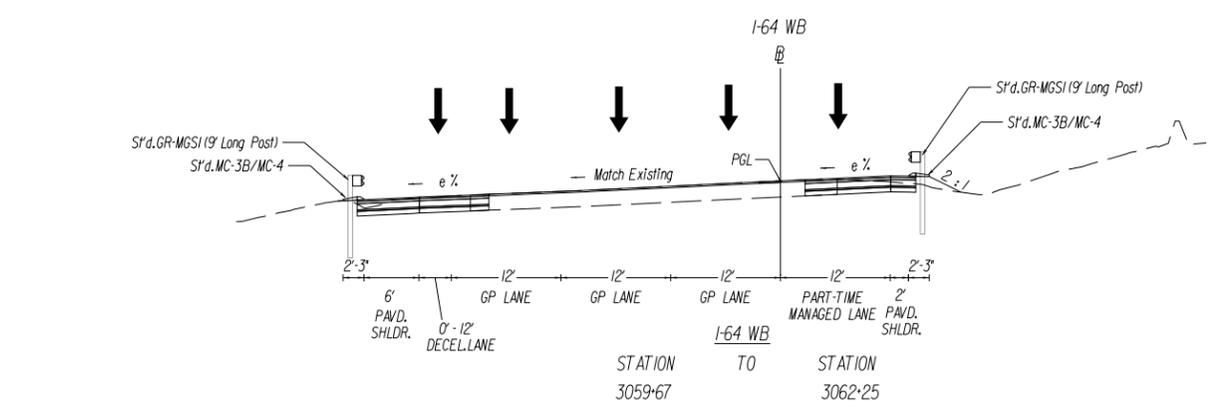
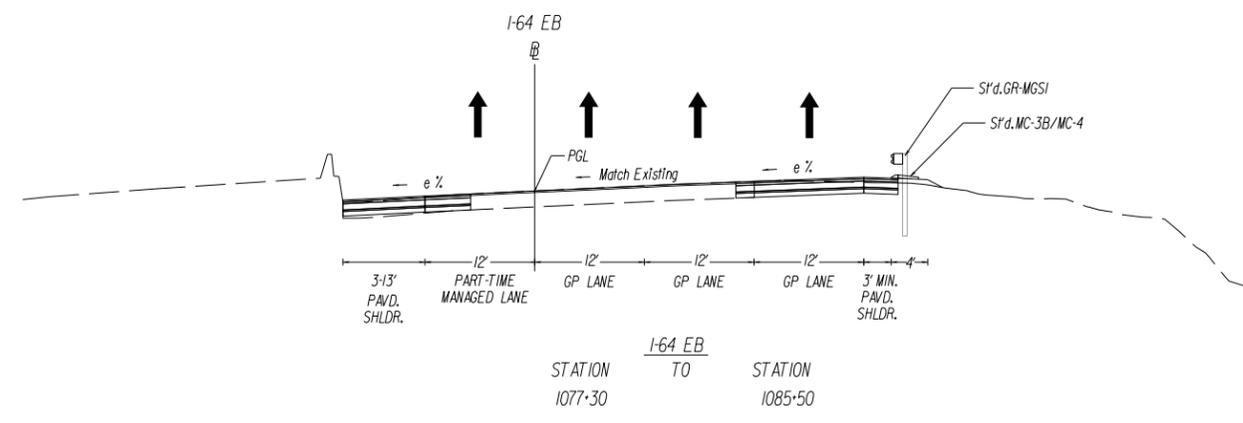
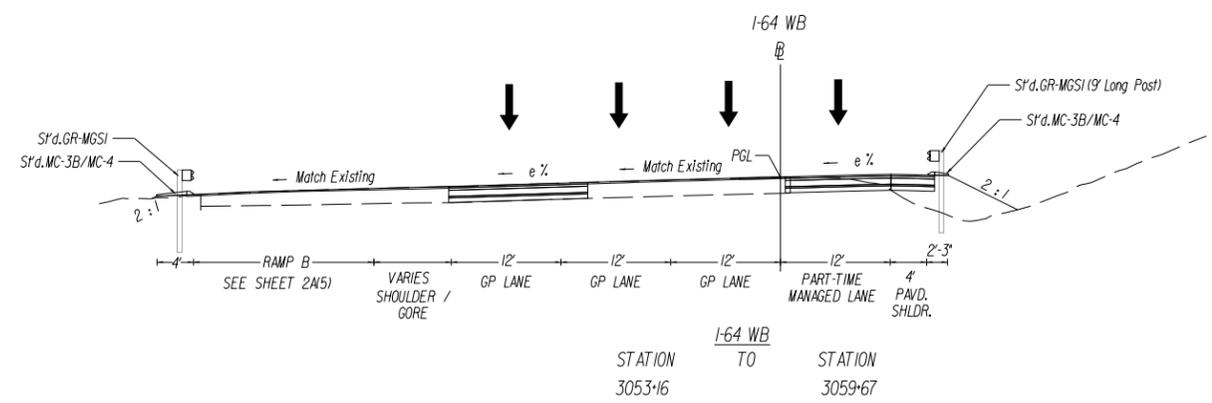
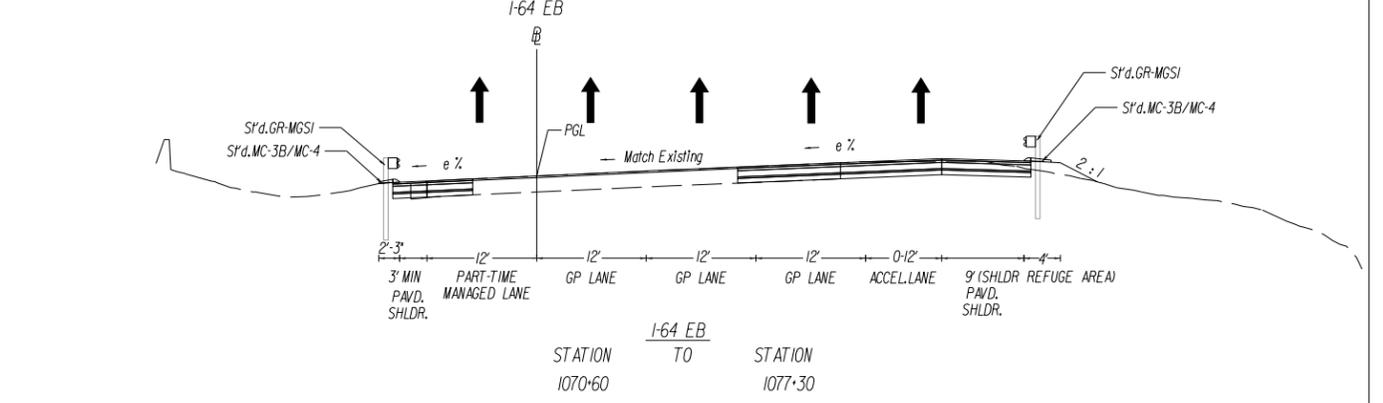
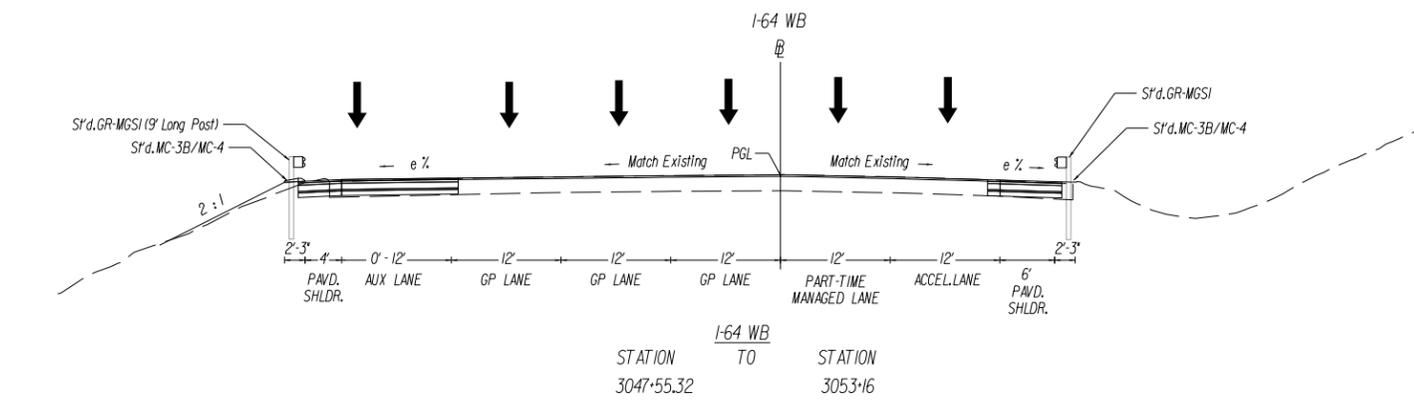
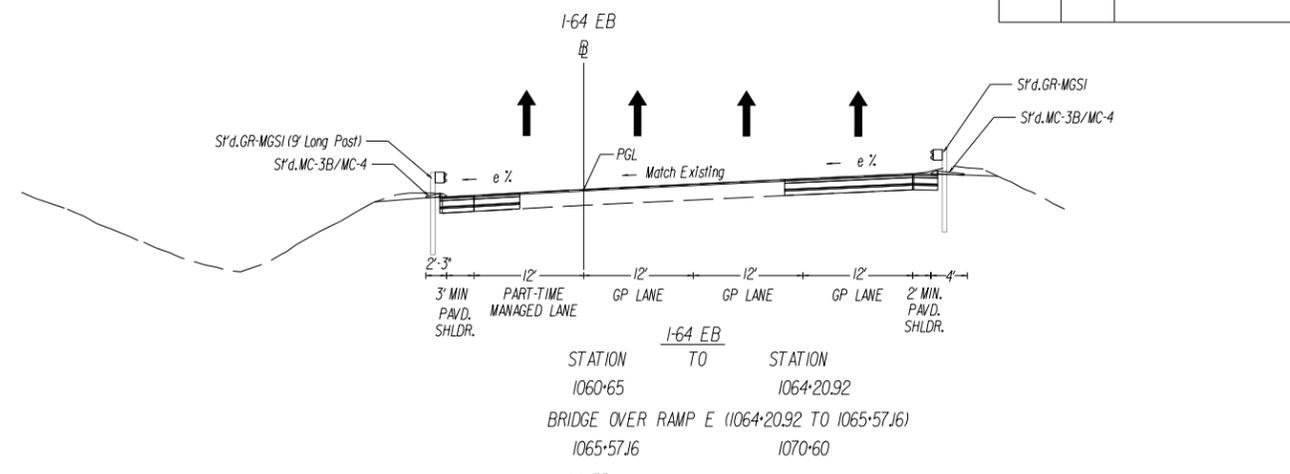
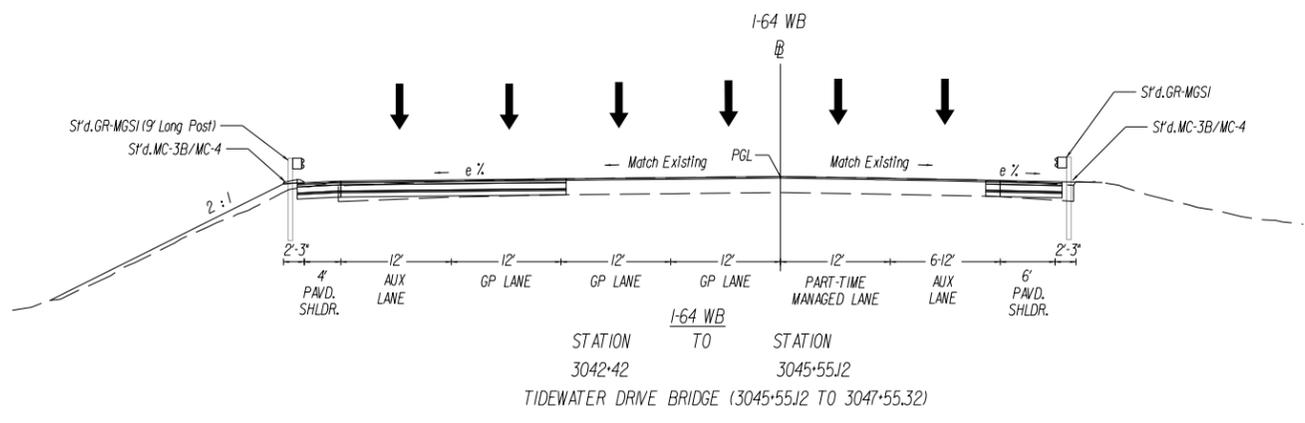
STATION TO STATION  
1054+84 TO 1054+93.03  
TIDEWATER DRIVE BRIDGE (1054+93.03 TO 1057+20.73)  
1057+20.73 TO 1060+65



# TYPICAL SECTIONS

NOT TO SCALE

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	64	0064-122-470 C501	2A(3)



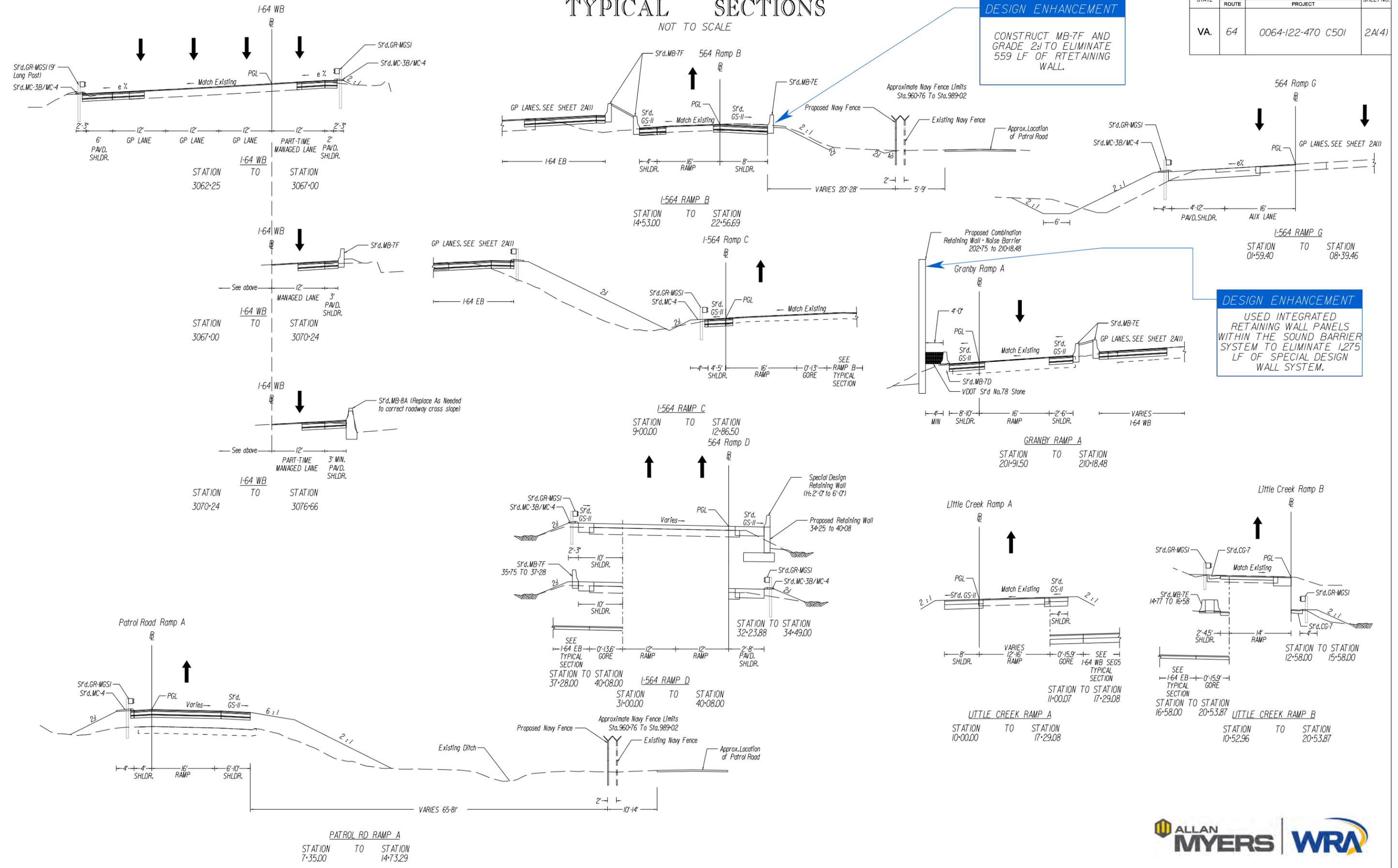
# TYPICAL SECTIONS

NOT TO SCALE

DESIGN ENHANCEMENT

CONSTRUCT MB-7F AND GRADE 2:1 TO ELIMINATE 559 LF OF RETAINING WALL.

STATE	ROUTE	PROJECT	SHEET NO.
VA.	64	0064-122-470 C501	2A(4)



DESIGN ENHANCEMENT

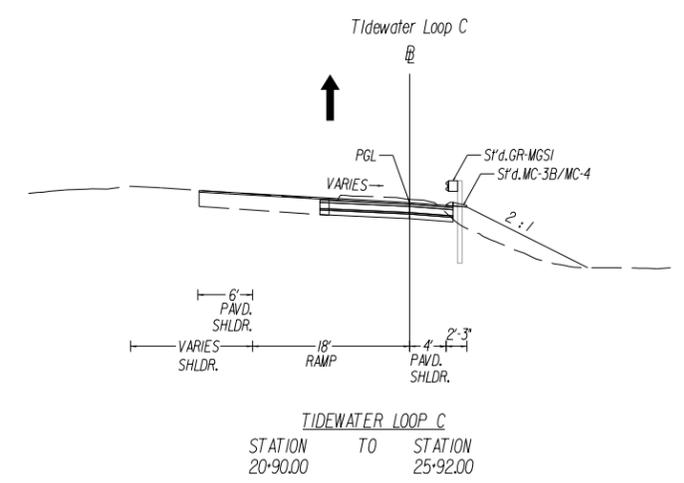
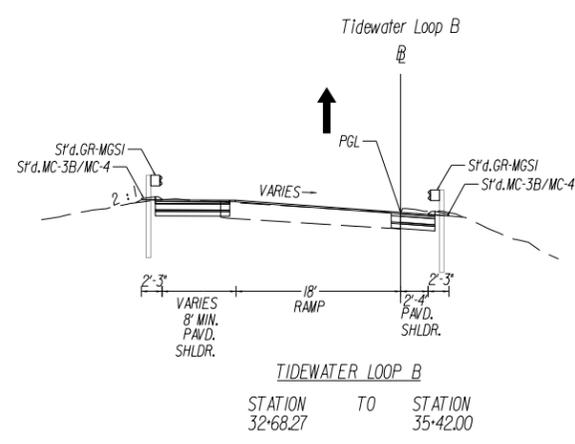
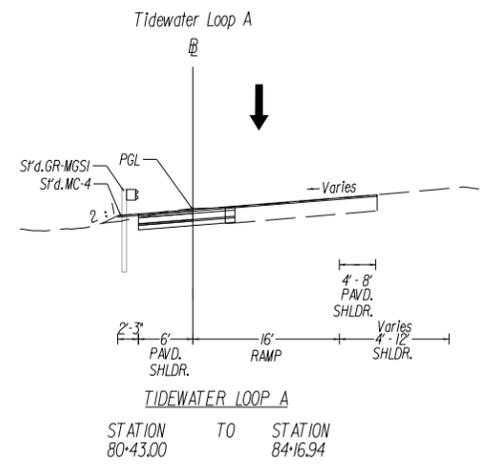
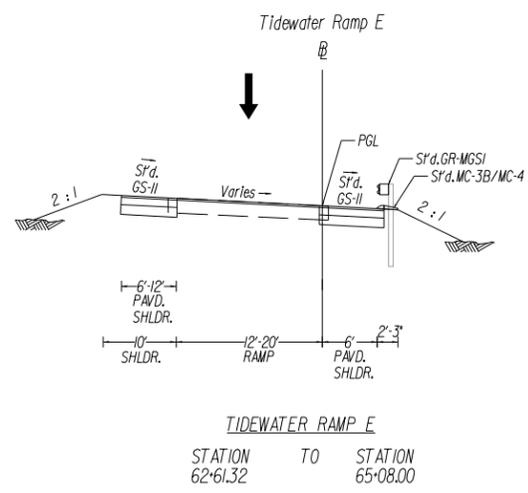
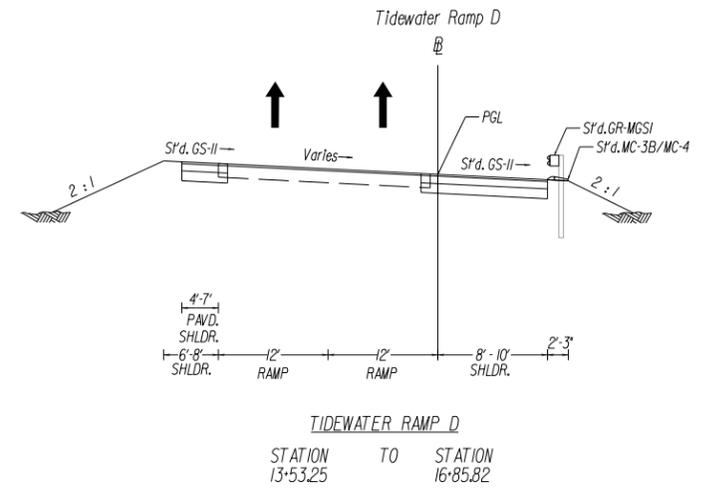
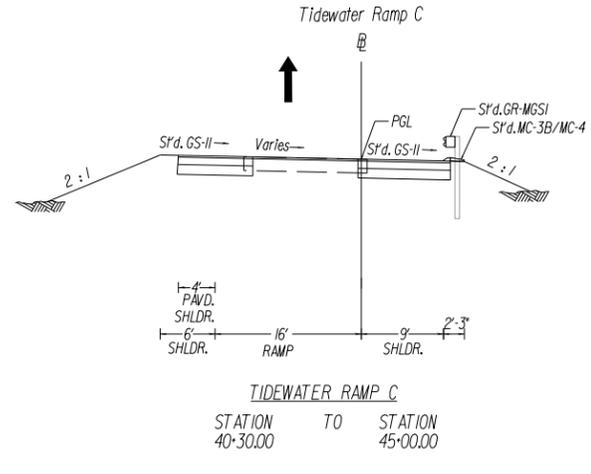
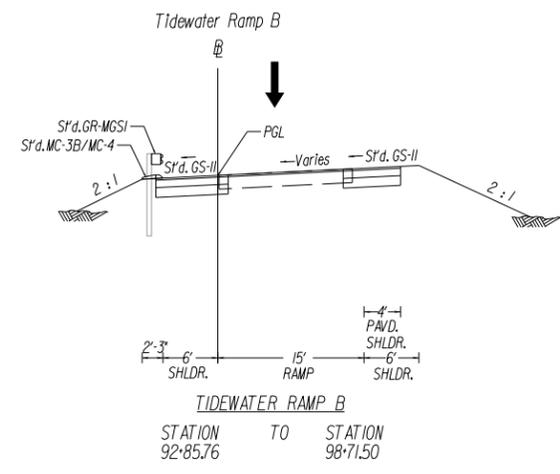
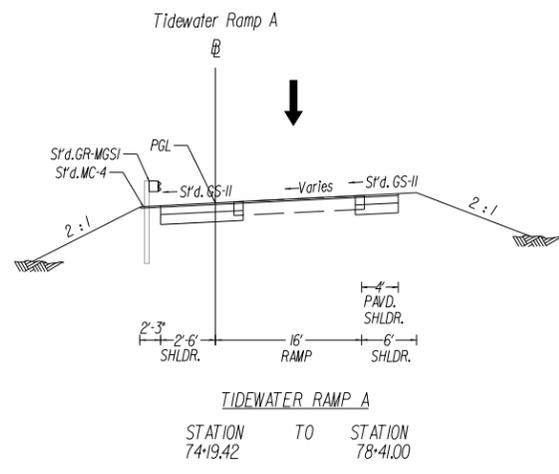
USED INTEGRATED RETAINING WALL PANELS WITHIN THE SOUND BARRIER SYSTEM TO ELIMINATE 1,275 LF OF SPECIAL DESIGN WALL SYSTEM.



# TYPICAL SECTIONS

NOT TO SCALE

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	64	0064-122-470 C501	2A(5)





STATE	ROUTE	PROJECT	SHEET NO.
VA.	64	0064-122-470 C501	PS-1

- LEGEND:**
- EXISTING RIGHT OF WAY AND/OR EXISTING LIMITED ACCESS LINE
  - PROPOSED RIGHT OF WAY
  - PROPOSED TEMPORARY EASEMENT
  - PROPOSED PERMANENT EASEMENT
  - PROPOSED UTILITY EASEMENT
  - MILL AND OVERLAY
  - FULL DEPTH PAVEMENT
  - AREAS OF REDUCED ROW / EASEMENT IMPACTS
  - NEW BRIDGE
  - BRIDGE REHAB
  - PROPOSED TRAFFIC MOVEMENTS
  - SEE SHEET CD-1 FOR CURVE DATA
  - ST'D VDOT MB-7D

**I-64 Hampton Roads Express Lanes (HREL) Segment IA**

- ST'D VDOT MB-7E
- ST'D VDOT MB-7F
- PROP.CONC.PARAPET (W/ MONUMENT SLAB)
- ST'D VDOT MB-8A
- ST'D VDOT MB-12B
- GUARDRAIL
- SPECIAL DESIGN TRENCH DRAIN
- PROP.IMPACT ATTENUATOR
- SOUND BARRIER
- SOUND BARRIER/RETAINING WALL

- RETAINING WALL
- ST'D VDOT BPPS
- 5' CONCRETE SIDEWALK
- ST'D CITY OF NORFOLK C&G
- ST'D VDOT CG-3
- ST'D VDOT FE-CL
- ST'D VDOT CG-7
- MODIFIED BARRIER RETAINING WALL
- DENOTES CONSTRUCTION LIMITS IN CUT
- DENOTES CONSTRUCTION LIMITS IN FILL
- PROPOSED ROADWAY LIGHTING EQUIPMENT
- PROPOSED TOLLING AND ITS EQUIPMENT AND INFRASTRUCTURE
- PROPOSED OVERHEAD SIGN STRUCTURE OR TOLL GANTRY

**VOLUME II TECHNICAL PLANS**

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY. ADDITIONAL EASEMENTS FOR UTILITY RELOCATIONS MAY BE REQUIRED BEYOND THE PROPOSED RIGHT-OF-WAY SHOWN ON THESE PLANS.

**DESIGN ENHANCEMENT**

EXTEND 2:1 FILL SLOPES TO ELIMINATE RETAINING WALL AT ITS DEVICES.

**DESIGN ENHANCEMENT**

UTILIZED A SPLINE GRADE THROUGHOUT THE PROJECT TO REDUCE IMPACTS TO TRAFFIC DURING CONSTRUCTION.

**DESIGN ENHANCEMENT**

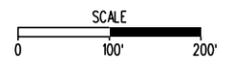
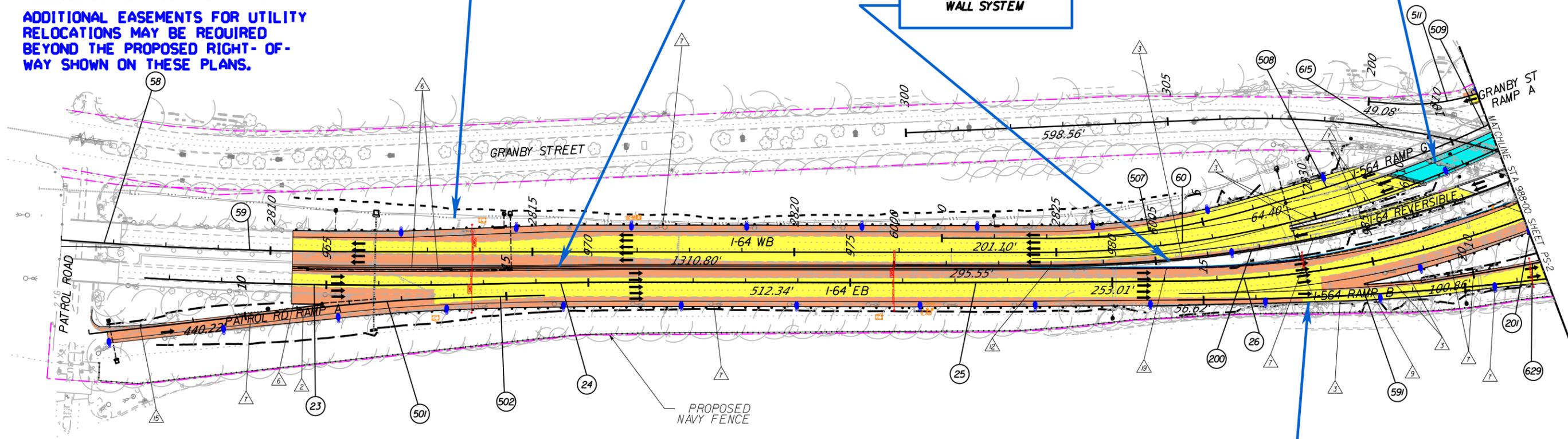
INCORPORATED A MODIFIED BARRIER WALL ELIMINATING A CONVENTIONAL RETAINING WALL SYSTEM

**DESIGN ENHANCEMENT**

UTILIZED THE WB MANAGED LANE TO ALLOW REPAIRS TO I-64 WB OVER GRANBY ST. TO BE CONSTRUCTED WHILE MAINTAINING A SINGLE LANE OF WB TRAFFIC.

**DESIGN ENHANCEMENT**

CONSTRUCT MB-7F AND GRADE 2:1 TO ELIMINATE 559 LF OF RETAINING WALL



STATE	ROUTE	PROJECT	SHEET NO
VA.	64	0064-122-470 C501	PS-2

- LEGEND:**
- EXISTING RIGHT OF WAY AND/OR LIMITED ACCESS LINE
  - PROPOSED RIGHT OF WAY
  - PROPOSED TEMPORARY EASEMENT
  - PROPOSED PERMANENT EASEMENT
  - PROPOSED UTILITY EASEMENT
  - MILL AND OVERLAY
  - FULL DEPTH PAVEMENT
  - AREAS OF REDUCED ROW / EASEMENT IMPACTS
  - NEW BRIDGE
  - BRIDGE REHAB
  - PROPOSED TRAFFIC MOVEMENTS
  - SEE SHEET CD-1 FOR CURVE DATA
  - ST'D VDOT MB-7D

- RETAINING WALL
- ST'D VDOT BPPS
- 5' CONCRETE SIDEWALK
- ST'D CITY OF NORFOLK C&G
- ST'D VDOT CG-3
- ST'D VDOT FE-CL
- ST'D VDOT CG-7
- MODIFIED BARRIER RETAINING WALL
- DENOTES CONSTRUCTION LIMITS IN CUT
- DENOTES CONSTRUCTION LIMITS IN FILL
- PROPOSED ROADWAY LIGHTING EQUIPMENT
- PROPOSED TOLLING AND ITS EQUIPMENT AND INFRASTRUCTURE
- PROPOSED OVERHEAD SIGN STRUCTURE OR TOLL GANTRY

**VOLUME II  
TECHNICAL PLANS**

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

ADDITIONAL EASEMENTS FOR UTILITY RELOCATIONS MAY BE REQUIRED BEYOND THE PROPOSED RIGHT-OF-WAY SHOWN ON THESE PLANS.

**DESIGN ENHANCEMENT**  
USED INTEGRATED RETAINING WALL PANELS WITHIN THE SOUND BARRIER SYSTEM TO ELIMINATE 1275 LF OF SPECIAL DESIGN WALL SYSTEM.

**DESIGN ENHANCEMENT**  
UTILIZED THE WB MANAGED LANE TO ALLOW REPAIRS TO I-64 WB OVER LITTLE CREEK RD. TO BE CONSTRUCTED WHILE MAINTAINING A SINGLE LANE OF WB TRAFFIC.

**DESIGN ENHANCEMENT**  
MODIFICATION TO TRENCH DRAIN DETAIL TO MINIMIZE PROPOSED PIPE UNDER DRAIN.

**DESIGN ENHANCEMENT**  
UTILIZED THE WB MANAGED LANE TO ALLOW REPAIRS TO I-64 WB OVER GRANBY ST. TO BE CONSTRUCTED WHILE MAINTAINING A SINGLE LANE OF WB TRAFFIC.

**DESIGN ENHANCEMENT**  
EXTEND 2:1 FILL SLOPES TO ELIMINATE RETAINING WALL AT ITS DEVICES.

**DESIGN ENHANCEMENT**  
REDUCED THE CLOSURE OF THE REVERSIBLE EXPRESS LANES BY PHASING BRIDGE CONSTRUCTION TO MAINTAIN ONE LANE.

**DESIGN ENHANCEMENT**  
ELIMINATED TRENCH DRAIN TO REDUCE LONG TERM MAINTENANCE AND IMPROVE CONSTRUCTABILITY.

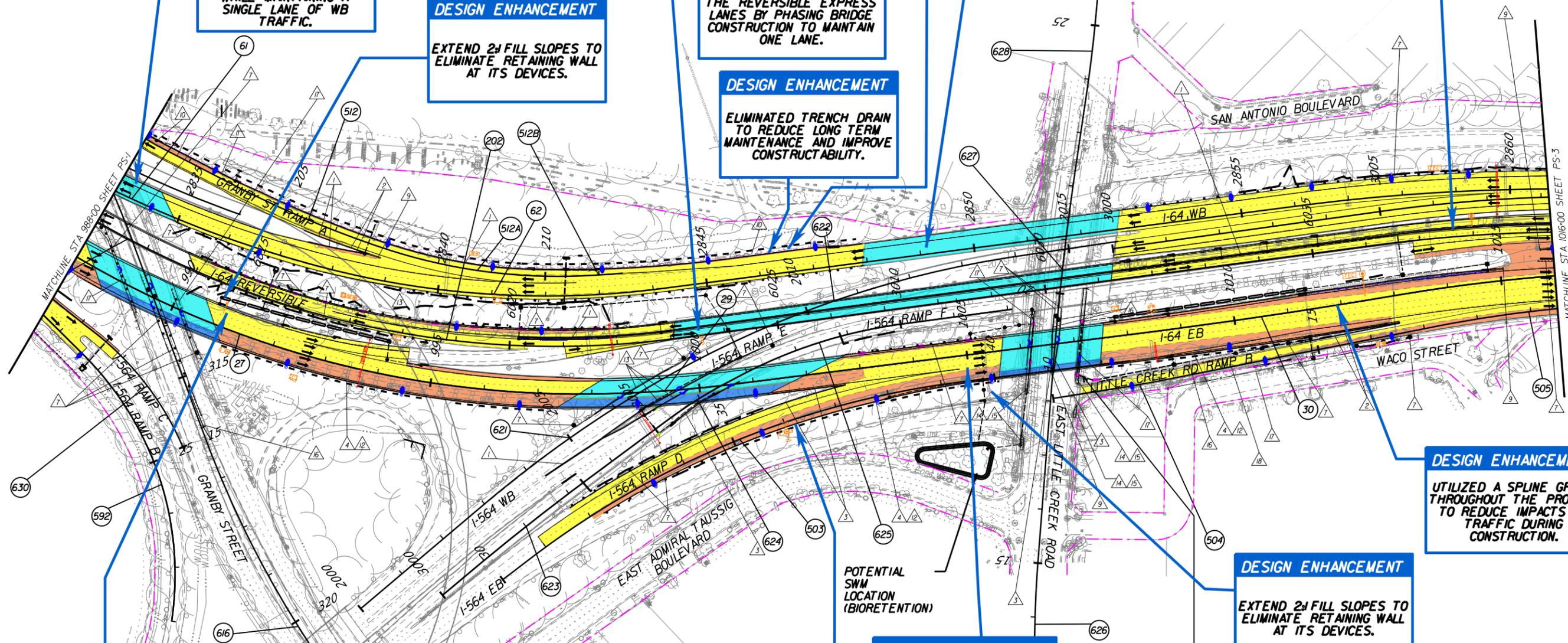
**DESIGN ENHANCEMENT**  
UTILIZED A SPLINE GRADE THROUGHOUT THE PROJECT TO REDUCE IMPACTS TO TRAFFIC DURING CONSTRUCTION.

**DESIGN ENHANCEMENT**  
EXTEND 2:1 FILL SLOPES TO ELIMINATE RETAINING WALL AT ITS DEVICES.

**DESIGN ENHANCEMENT**  
RECONFIGURED RAMP DURING CONSTRUCTION TO REDUCE THE USAGE OF STEEL PLATES AND IMPROVE SAFETY, COST, AND CONSTRUCTION DURATION.

**DESIGN ENHANCEMENT**  
ELIMINATED TRENCH DRAIN TO REDUCE LONG TERM MAINTENANCE AND IMPROVE CONSTRUCTABILITY.

**DESIGN ENHANCEMENT**  
SHIFTED THE I-564 MERGE POINT DURING CONSTRUCTION TO ELIMINATE THE NEED FOR STEEL PLATES, WHICH REDUCES THE CONSTRUCTION DURATION AND PROVIDES A SAFER WORK ZONE.



REPLACE EXISTING TRAFFIC SIGNAL WITH NEW EQUIPMENT

SCALE: 0 100' 200'

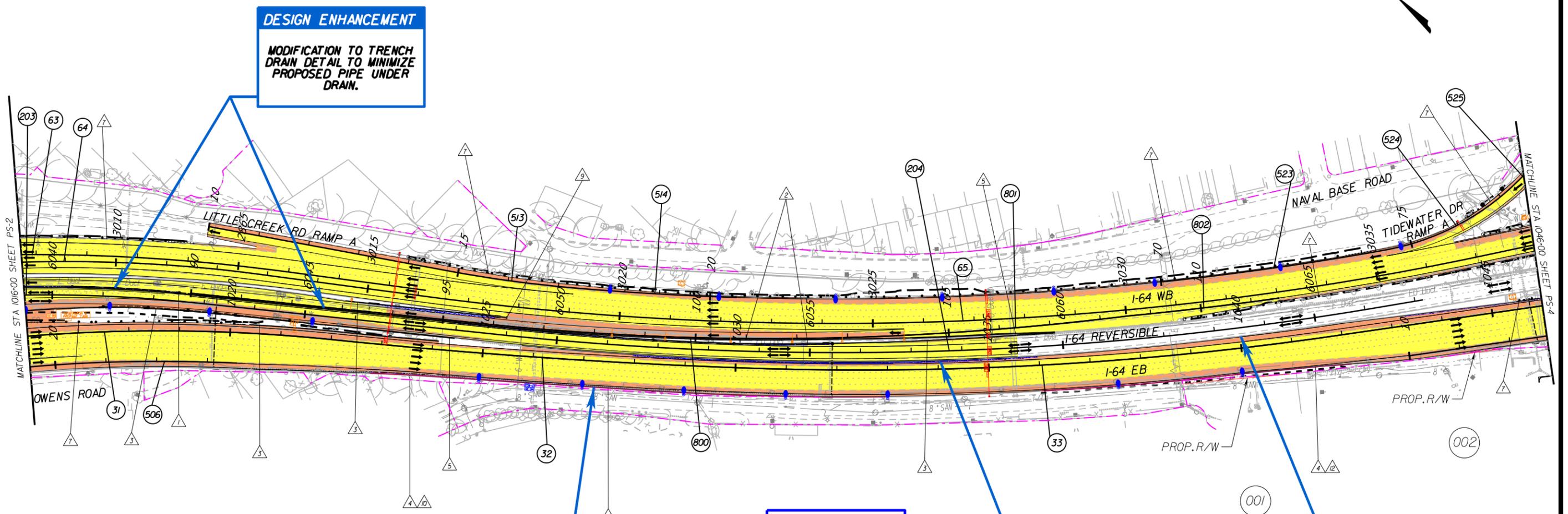
**ALLAN MYERS** | **WRA**

- LEGEND:**
- EXISTING RIGHT OF WAY AND/OR EXISTING LIMITED ACCESS LINE
  - PROPOSED RIGHT OF WAY
  - PROPOSED TEMPORARY EASEMENT
  - PROPOSED PERMANENT EASEMENT
  - PROPOSED UTILITY EASEMENT
  - MILL AND OVERLAY
  - FULL DEPTH PAVEMENT
  - AREAS OF REDUCED ROW / EASEMENT IMPACTS
  - NEW BRIDGE
  - BRIDGE REHAB
  - PROPOSED TRAFFIC MOVEMENTS
  - SEE SHEET CD-1 FOR CURVE DATA
  - ST'D VDOT MB-7D

### I-64 Hampton Roads Express Lanes (HREL) Segment IA

- ST'D VDOT MB-7E
- ST'D VDOT MB-7F
- PROP.CONC.PARAPET (W/ MONUMENT SLAB)
- ST'D VDOT MB-8A
- ST'D VDOT MB-12B
- GUARDRAIL
- SPECIAL DESIGN TRENCH DRAIN
- PROP.IMPACT ATTENUATOR
- SOUND BARRIER
- SOUND BARRIER/RETAINING WALL
- RETAINING WALL
- ST'D VDOT BPPS
- 5' CONCRETE SIDEWALK
- ST'D CITY OF NORFOLK C&G
- ST'D VDOT CG-3
- ST'D VDOT FE-CL
- ST'D VDOT CG-7
- MODIFIED BARRIER RETAINING WALL
- DENOTES CONSTRUCTION LIMITS IN CUT
- DENOTES CONSTRUCTION LIMITS IN FILL
- PROPOSED ROADWAY LIGHTING EQUIPMENT
- PROPOSED TOLLING AND ITS EQUIPMENT AND INFRASTRUCTURE
- PROPOSED OVERHEAD SIGN STRUCTURE OR TOLL GANTRY

STATE	ROUTE	STATE	PROJECT	SHEET NO
VA.	64		0064-122-470 C501	PS-3



**DESIGN ENHANCEMENT**

MODIFICATION TO TRENCH DRAIN DETAIL TO MINIMIZE PROPOSED PIPE UNDER DRAIN.

**DESIGN ENHANCEMENT**

PARTIAL REMOVAL OF EXISTING RETAINING WALL AND CONSTRUCTION OF NEW BARRIER ON TOP OF EXISTING RETAINING WALL TO ELIMINATE THE NEED TO FULLY REMOVE EXISTING RETAINING WALL AND CONSTRUCT 725 LF OF NEW RETAINING WALL.

**VOLUME II TECHNICAL PLANS**

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY. ADDITIONAL EASEMENTS FOR UTILITY RELOCATIONS MAY BE REQUIRED BEYOND THE PROPOSED RIGHT-OF-WAY SHOWN ON THESE PLANS.

**DESIGN ENHANCEMENT**

MODIFICATION TO TRENCH DRAIN DETAIL TO MINIMIZE PROPOSED PIPE UNDER DRAIN.

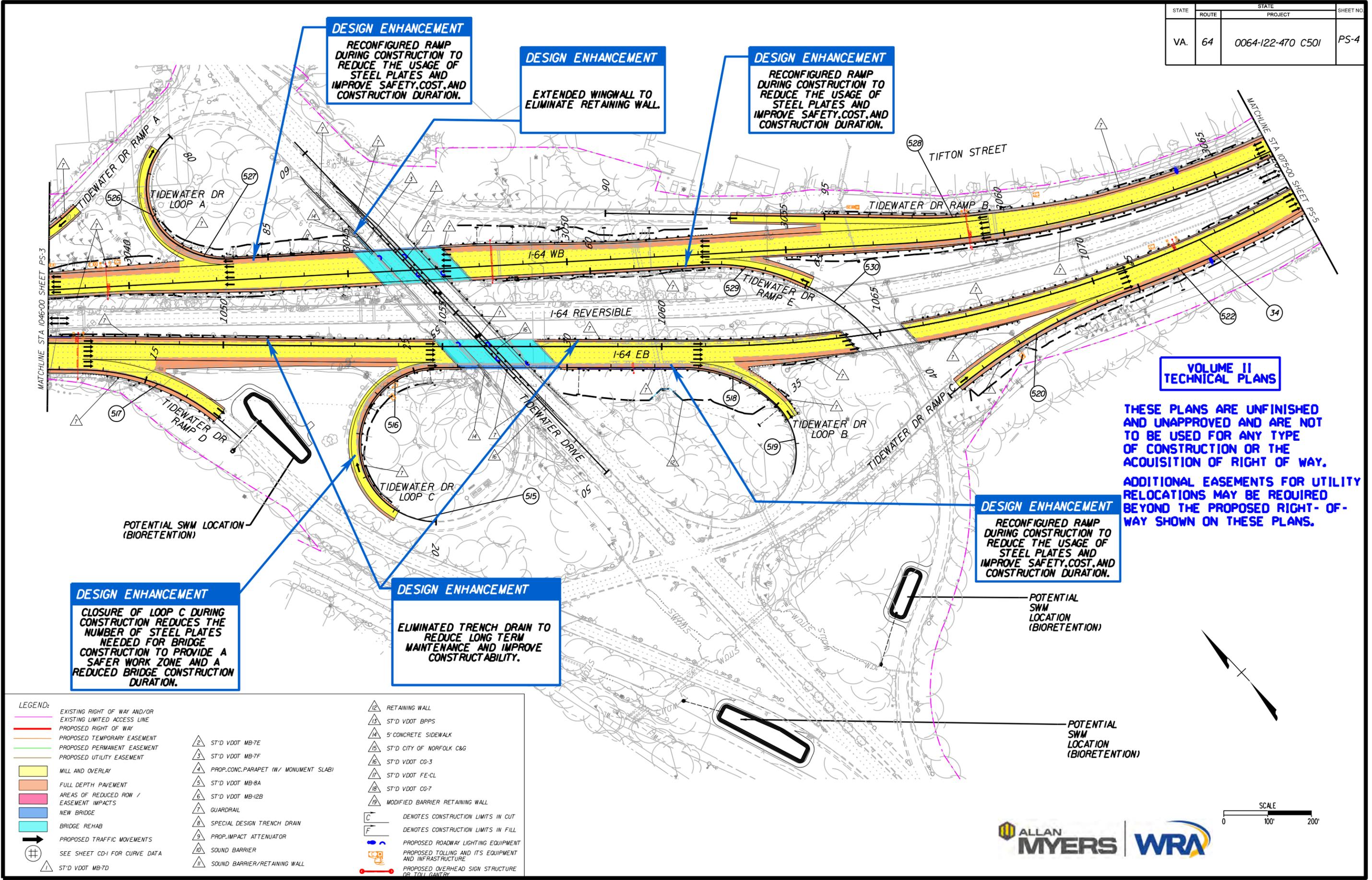
**DESIGN ENHANCEMENT**

ELIMINATED TRENCH DRAIN TO REDUCE LONG TERM MAINTENANCE AND IMPROVE CONSTRUCTABILITY.

SCALE 0 100' 200'

ALLAN MYERS | WRA

STATE	ROUTE	STATE PROJECT	SHEET NO
VA.	64	0064-122-470 C501	PS-4

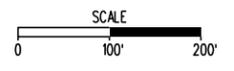


**VOLUME II  
TECHNICAL PLANS**

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**LEGEND:**

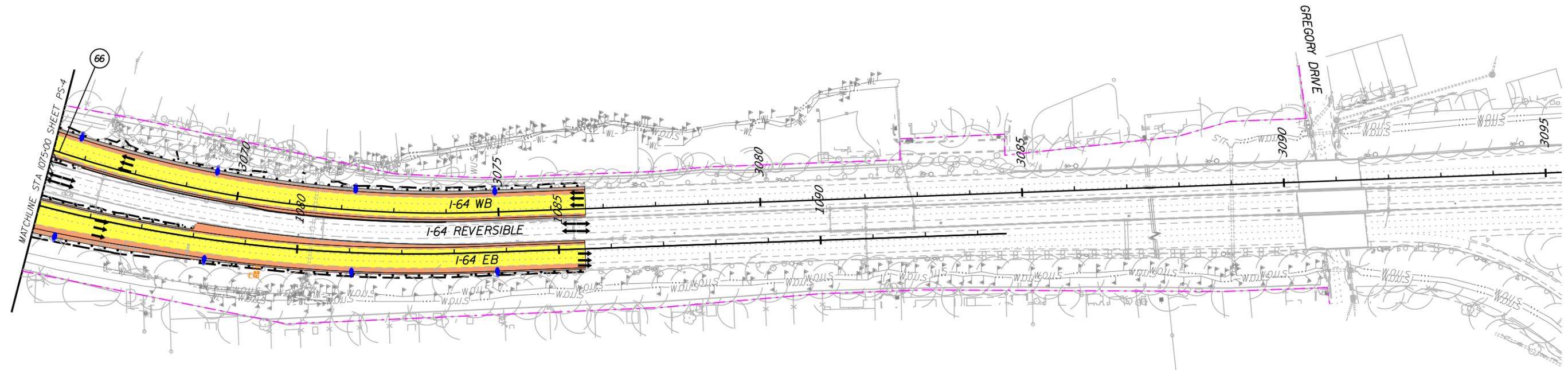
	EXISTING RIGHT OF WAY AND/OR EXISTING LIMITED ACCESS LINE		RETAINING WALL
	PROPOSED RIGHT OF WAY		ST'D VDOT BPPS
	PROPOSED TEMPORARY EASEMENT		5' CONCRETE SIDEWALK
	PROPOSED PERMANENT EASEMENT		ST'D CITY OF NORFOLK C&G
	PROPOSED UTILITY EASEMENT		ST'D VDOT CG-3
	MILL AND OVERLAY		ST'D VDOT FE-CL
	FULL DEPTH PAVEMENT		ST'D VDOT CG-7
	AREAS OF REDUCED ROW / EASEMENT IMPACTS		MODIFIED BARRIER RETAINING WALL
	NEW BRIDGE		DENOTES CONSTRUCTION LIMITS IN CUT
	BRIDGE REHAB		DENOTES CONSTRUCTION LIMITS IN FILL
	PROPOSED TRAFFIC MOVEMENTS		PROPOSED ROADWAY LIGHTING EQUIPMENT
	SEE SHEET CD-1 FOR CURVE DATA		PROPOSED TOLLING AND ITS EQUIPMENT AND INFRASTRUCTURE
	ST'D VDOT MB-7D		PROPOSED OVERHEAD SIGN STRUCTURE OR TOLL GANTRY
	ST'D VDOT MB-7E		
	ST'D VDOT MB-7F		
	PROP. CONC. PARAPET (W/ MONUMENT SLAB)		
	ST'D VDOT MB-8A		
	ST'D VDOT MB-12B		
	GUARDRAIL		
	SPECIAL DESIGN TRENCH DRAIN		
	PROP. IMPACT ATTENUATOR		
	SOUND BARRIER		
	SOUND BARRIER/RETAINING WALL		



**LEGEND:** **I-64 Hampton Roads Express Lanes (HREL) Segment IA**

- EXISTING RIGHT OF WAY AND/OR LIMITED ACCESS LINE
- PROPOSED RIGHT OF WAY
- PROPOSED TEMPORARY EASEMENT
- PROPOSED PERMANENT EASEMENT
- PROPOSED UTILITY EASEMENT
- MILL AND OVERLAY
- FULL DEPTH PAVEMENT
- AREAS OF REDUCED ROW / EASEMENT IMPACTS
- NEW BRIDGE
- BRIDGE REHAB
- PROPOSED TRAFFIC MOVEMENTS
- SEE SHEET CD-1 FOR CURVE DATA
- ST'D VDOT MB-7D
- ST'D VDOT MB-7E
- ST'D VDOT MB-7F
- PROP.CONC.PARAPET (W/ MONUMENT SLAB)
- ST'D VDOT MB-8A
- ST'D VDOT MB-12B
- GUARDRAIL
- SPECIAL DESIGN TRENCH DRAIN
- PROP.IMPACT ATTENUATOR
- SOUND BARRIER
- SOUND BARRIER/RETAINING WALL
- RETAINING WALL
- ST'D VDOT BPPS
- 5' CONCRETE SIDEWALK
- ST'D CITY OF NORFOLK C&G
- ST'D VDOT CG-3
- ST'D VDOT FE-CL
- ST'D VDOT CG-7
- MODIFIED BARRIER RETAINING WALL
- DENOTES CONSTRUCTION LIMITS IN CUT
- DENOTES CONSTRUCTION LIMITS IN FILL
- PROPOSED ROADWAY LIGHTING EQUIPMENT
- PROPOSED TOLLING AND ITS EQUIPMENT AND INFRASTRUCTURE
- PROPOSED OVERHEAD SIGN STRUCTURE OR TOLL GANTRY

STATE	ROUTE	STATE PROJECT	SHEET NO
VA.	64	0064-122-470 C50I	PS-5



**VOLUME II TECHNICAL PLANS**

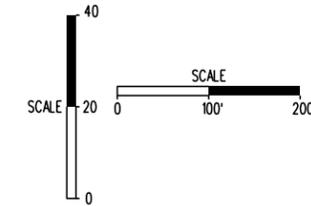
**THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.**

**ADDITIONAL EASEMENTS FOR UTILITY RELOCATIONS MAY BE REQUIRED BEYOND THE PROPOSED RIGHT-OF-WAY SHOWN ON THESE PLANS.**

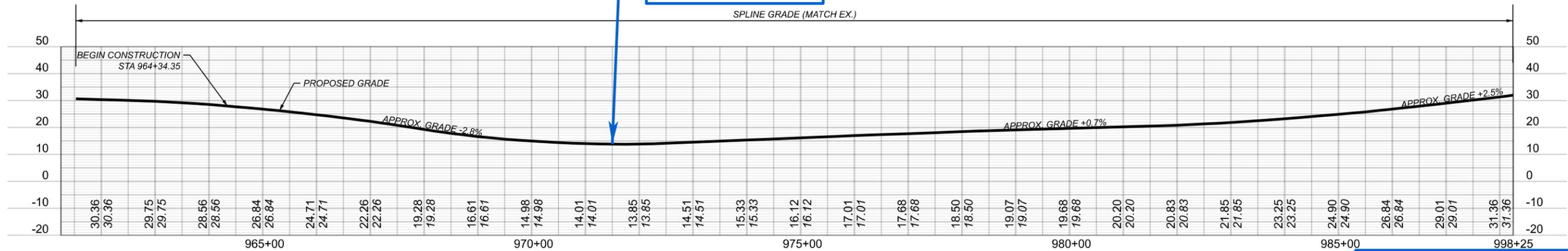


# I-64 Hampton Roads Express Lanes (HREL) Segment IA

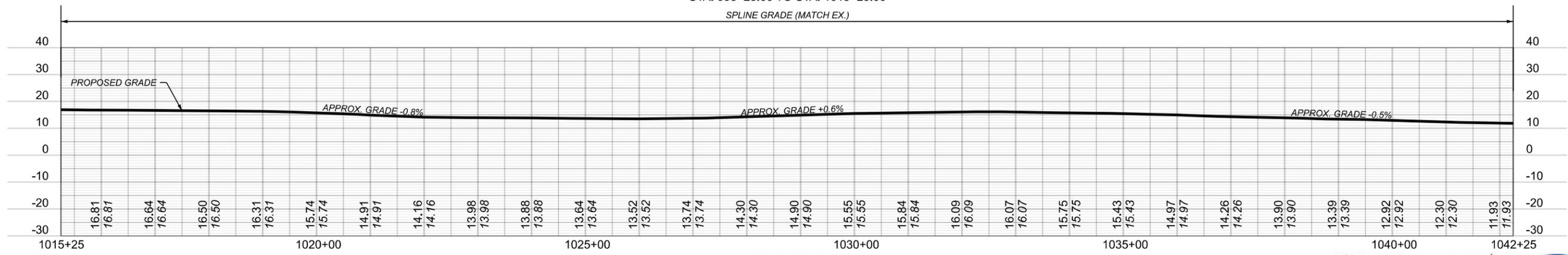
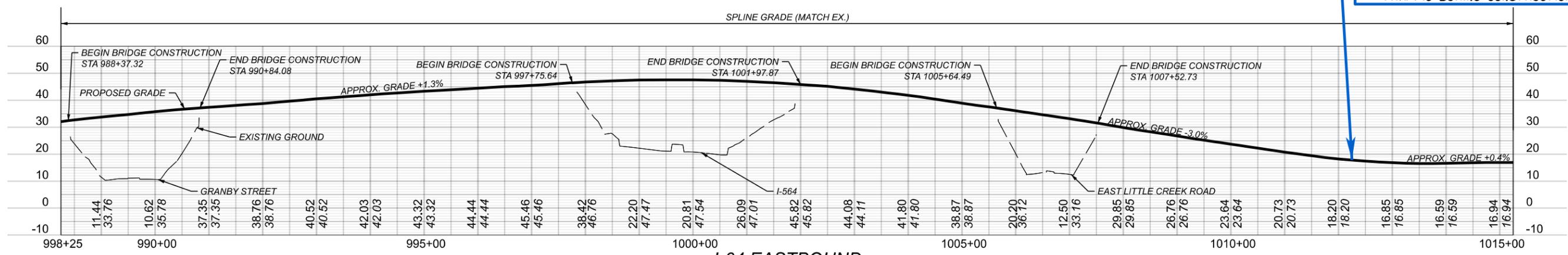
STATE	ROUTE	PROJECT	SHEET NO.
VA.	64	0064-122-470 C50I	PR-01



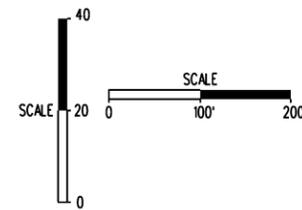
**DESIGN ENHANCEMENT**  
 UTILIZED A SPLINE GRADE THROUGHOUT THE PROJECT TO REDUCE IMPACTS TO TRAFFIC DURING CONSTRUCTION.



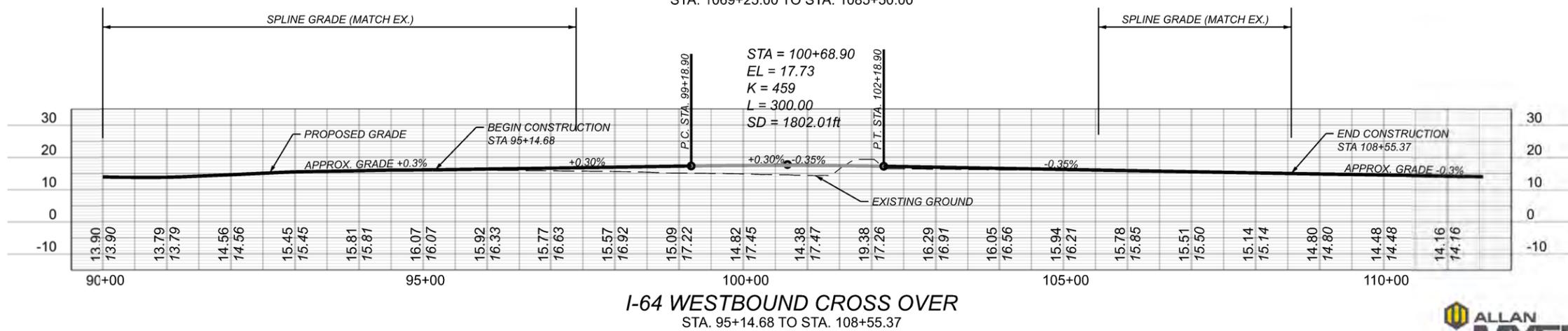
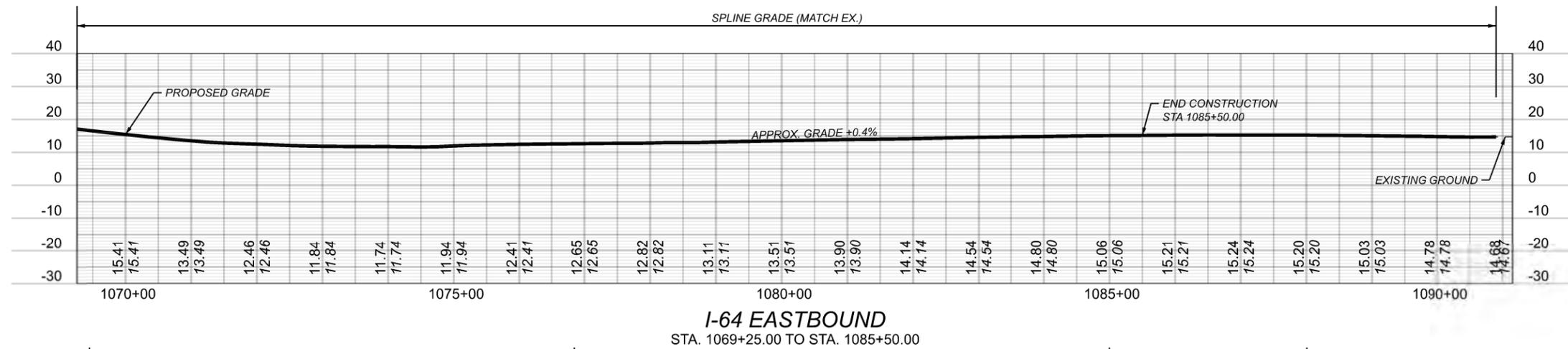
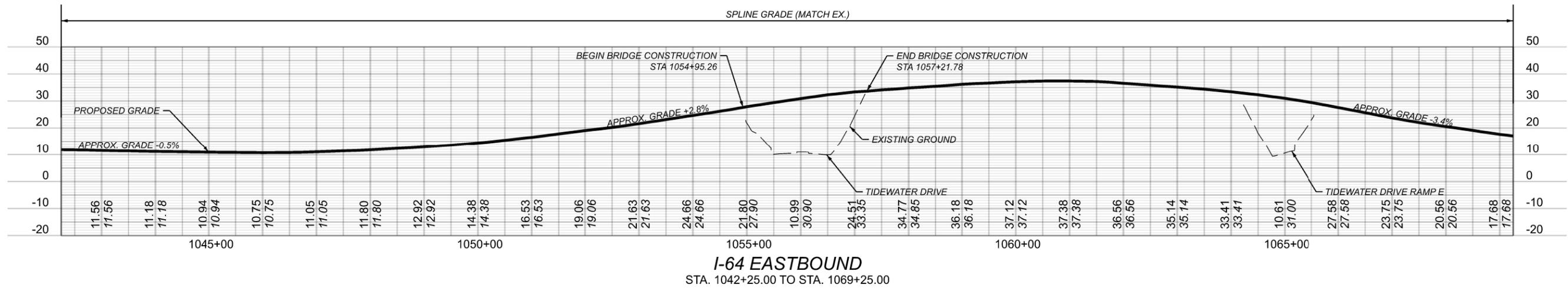
**DESIGN ENHANCEMENT**  
 UTILIZED A SPLINE GRADE THROUGHOUT THE PROJECT TO REDUCE IMPACTS TO TRAFFIC DURING CONSTRUCTION.



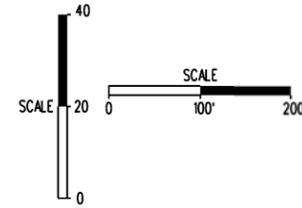
**I-64 Hampton Roads Express  
Lanes (HREL) Segment IA**



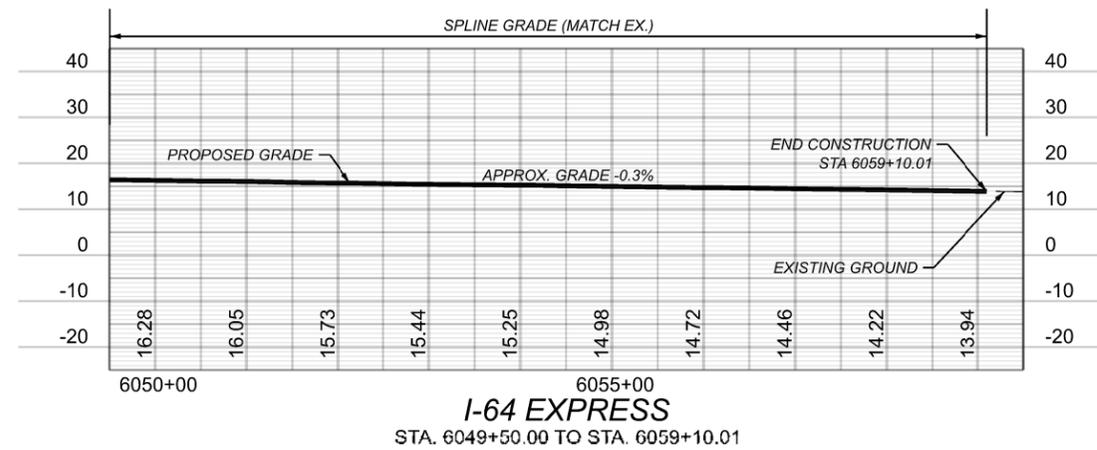
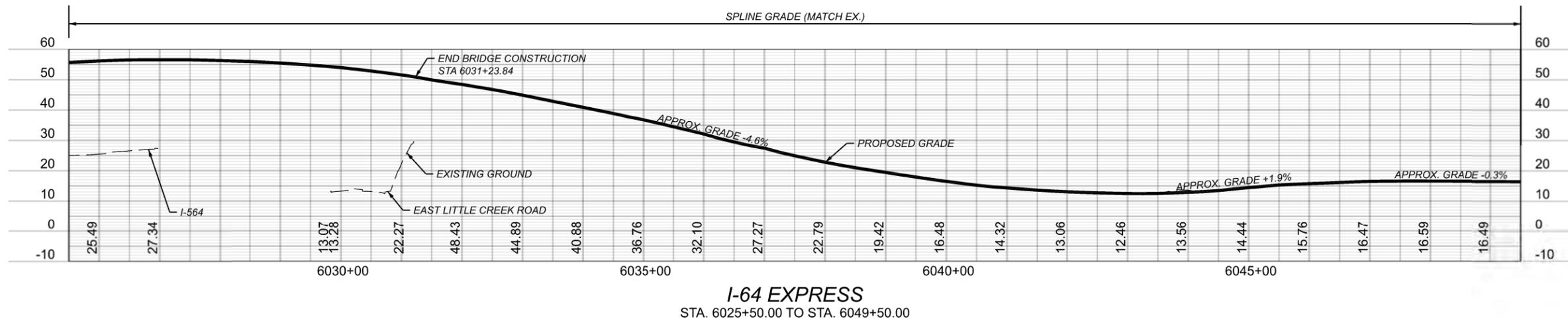
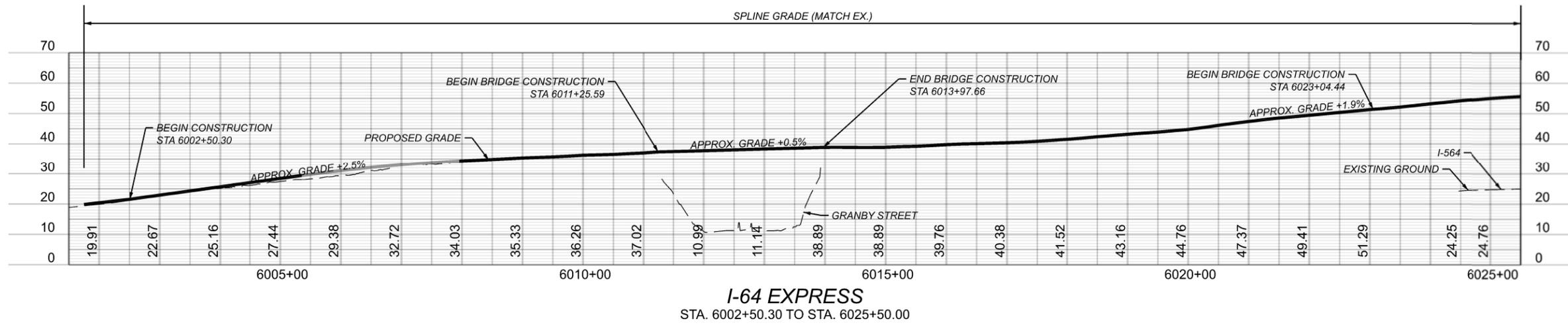
STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	64	0064-122-470 C501	PR-02



I-64 Hampton Roads Express  
Lanes (HREL) Segment IA



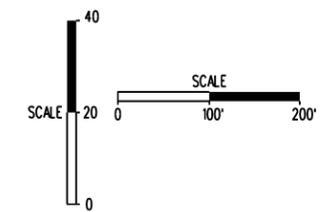
STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	64	0064-122-470 C501	PR-03



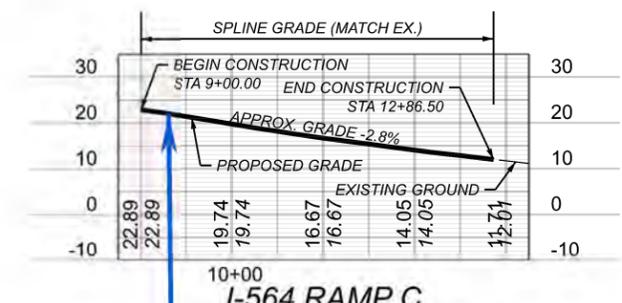
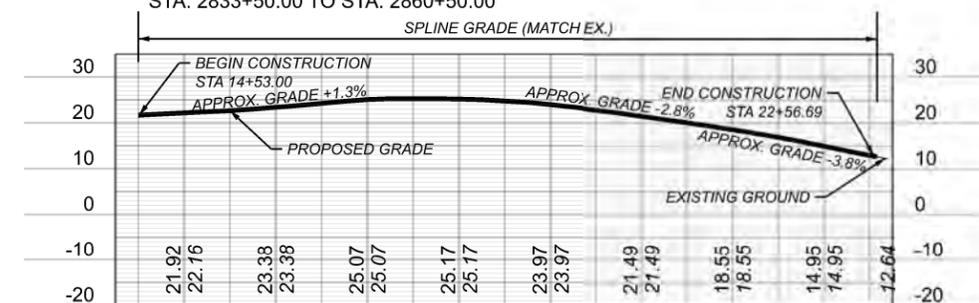
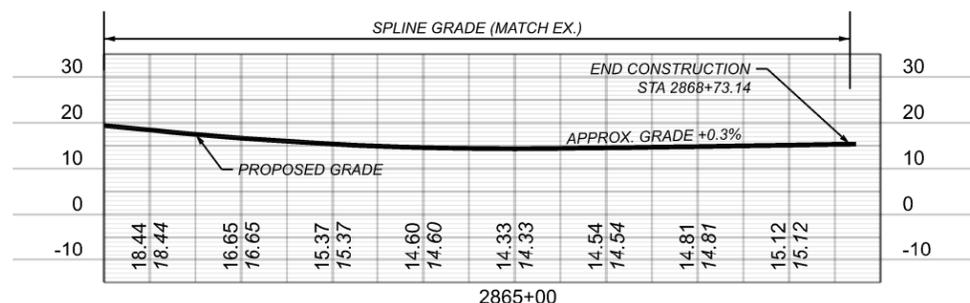
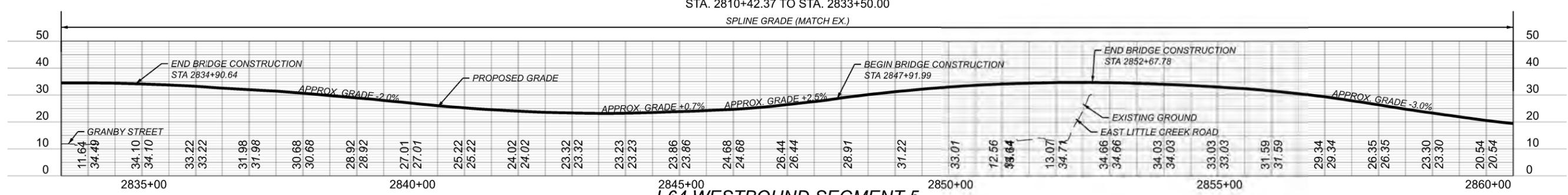
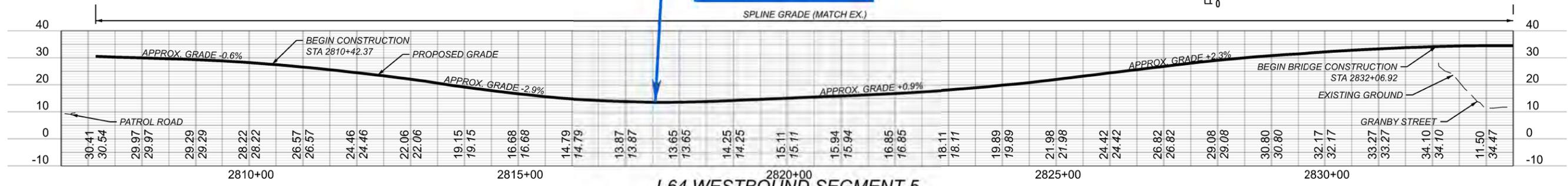


# I-64 Hampton Roads Express Lanes (HREL) Segment IA

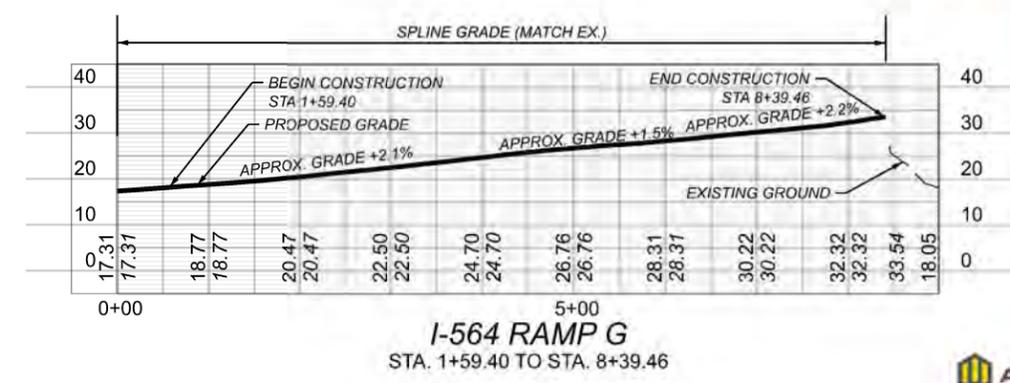
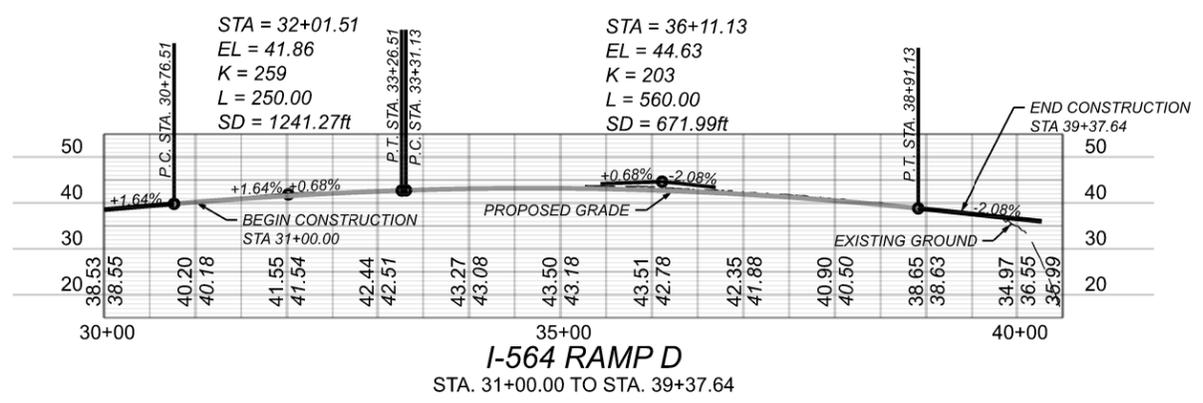
**DESIGN ENHANCEMENT**  
 UTILIZED A SPLINE GRADE THROUGHOUT THE PROJECT TO REDUCE IMPACTS TO TRAFFIC DURING CONSTRUCTION.



STATE	ROUTE	PROJECT	SHEET NO
VA.	64	0064-122-470 C50I	PR-05

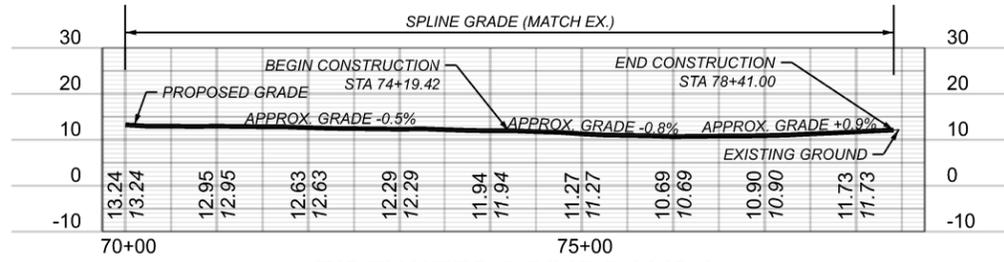
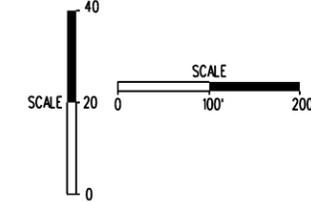


**DESIGN ENHANCEMENT**  
 MATCHED EXISTING VERTICAL ALIGNMENT TO ELIMINATE THE NEED FOR A RAMP CLOSURE AND DETOUR.

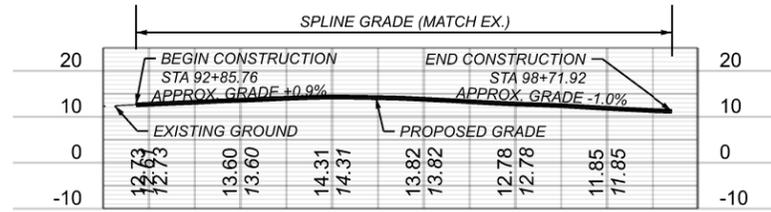


# I-64 Hampton Roads Express Lanes (HREL) Segment IA

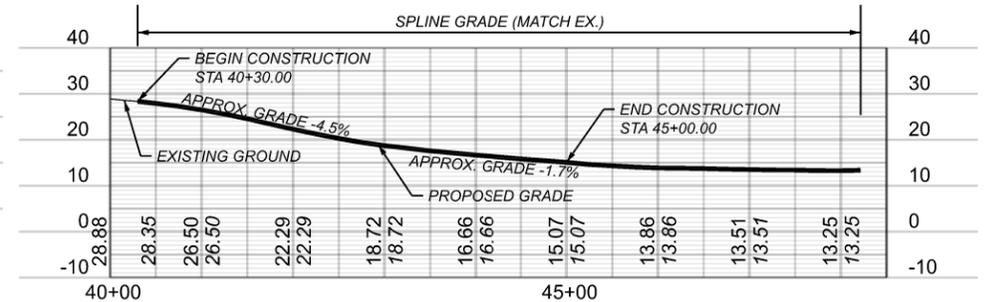
STATE	ROUTE	PROJECT	SHEET NO.
VA.	64	0064-122-470 C50I	PR-06



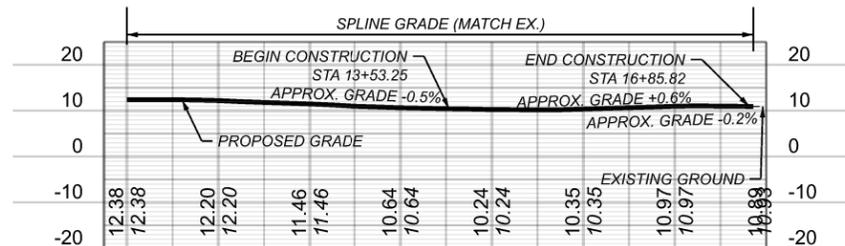
**TIDEWATER DRIVE RAMP A**  
STA. 74+19.42 TO STA. 78+41.00



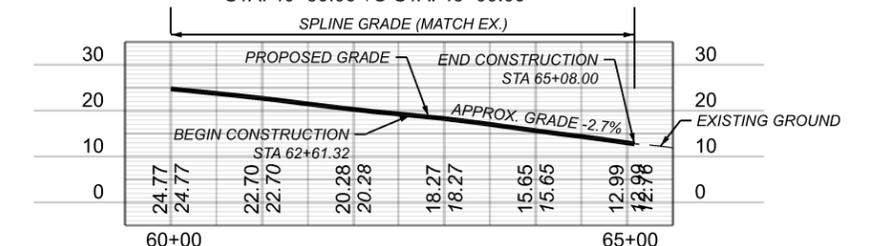
**TIDEWATER DRIVE RAMP B**  
STA. 92+85.76 TO STA. 98+71.92



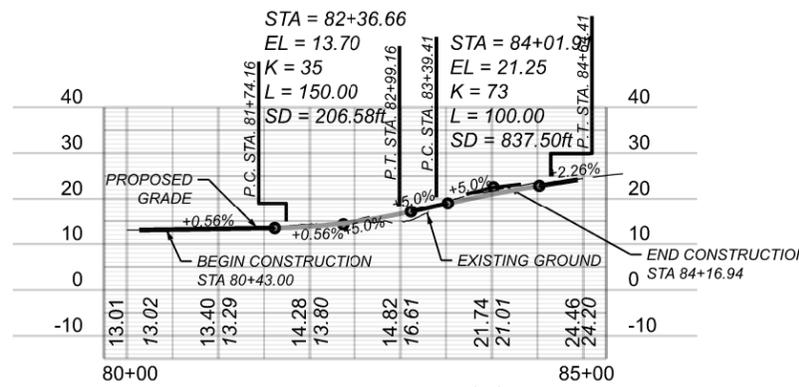
**TIDEWATER DRIVE RAMP C**  
STA. 40+30.00 TO STA. 45+00.00



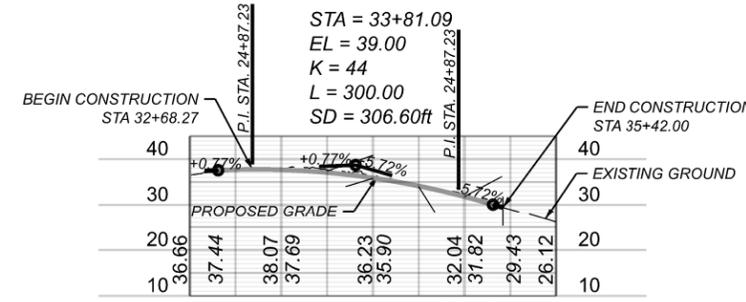
**TIDEWATER DRIVE RAMP D**  
STA. 13+53.25 TO STA. 16+85.82



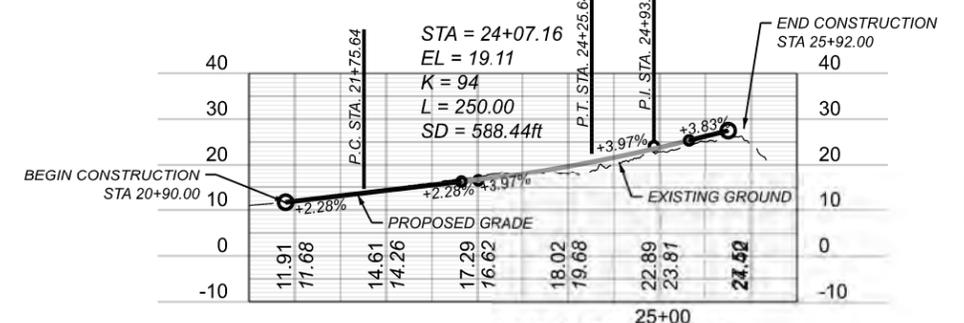
**TIDEWATER DRIVE RAMP E**  
STA. 62+61.32 TO STA. 65+08.00



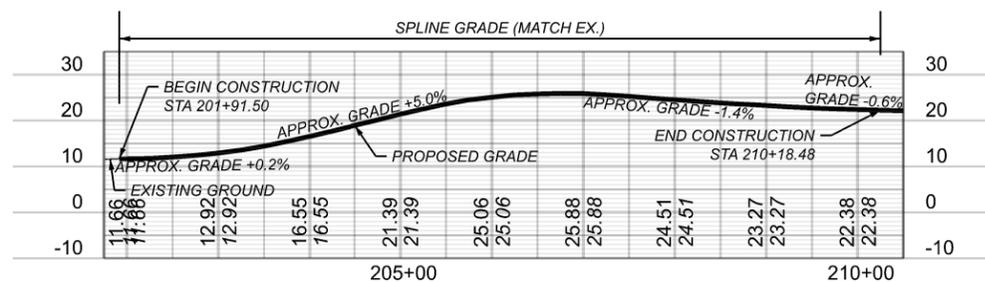
**TIDEWATER DRIVE LOOP A**  
STA. 80+43.00 TO STA. 84+16.94



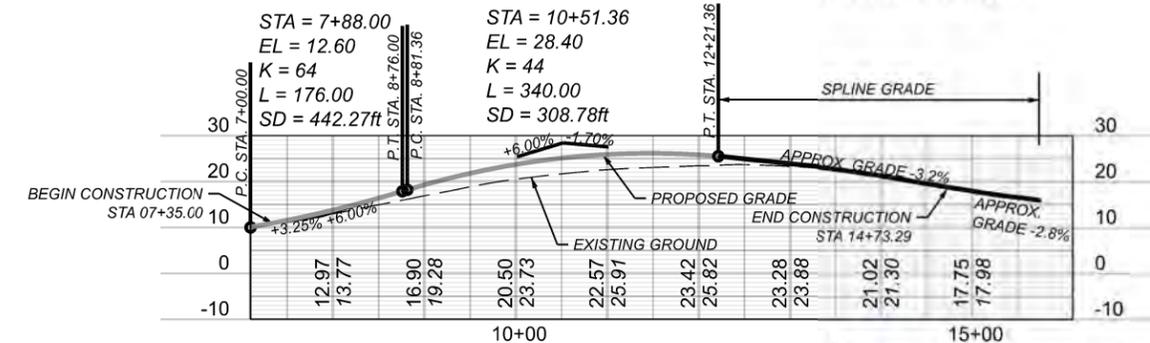
**TIDEWATER DRIVE LOOP B**  
STA. 32+68.27 TO STA. 35+42.00



**TIDEWATER DRIVE LOOP C**  
STA. 20+90.00 TO STA. 25+92.00



**GRANBY STREET RAMP A**  
STA. 201+91.50 TO STA. 210+18.48



**PATROL ROAD RAMP A**  
STA. 7+35.00 TO STA. 14+73.29



STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.
VA.	NHPP-064-3(520)	64	0064-122-470, B655	B-01
Federal Structure No. 0000000020902		FHWA Construction and Scour Code: X271-SN		
Federal Stewardship and Oversight Code: FO			UPC No. 119637	

**DESIGN EXCEPTION(S):**  
 Stopping Sight Distance for I-64 GP lane pending VDOT approval.  
 Superelevation Rate on existing bridge pending VDOT approval.  
 Shoulder Width pending VDOT approval.

**GENERAL NOTES:**  
 Width: 66'-0" face-to-face of curbs includes widening of 14'-8"± on the right side of traffic.  
 Span layout: 53'-1 1/2"± - 64'-6 1/4"± - 64'-2 3/4"± - 57'-11 5/8"±  
 Simple steel plate girder spans.  
 Capacity: HL-93 loading (widened portion only). HS20-44 for existing.  
 Specifications:  
 Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.  
 Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new bridge elements).  
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.  
 Design loading includes 20 psf allowance for construction tolerances and construction methods for new bridge elements.  
 Design loading includes 15 psf allowance for future wearing surface for new bridge elements.  
 Bridge No. of existing bridge is 2876. Plan No. is 155-01 and 155-01A.  
 The existing structure is designated a Type B structure in accordance with Sec. 411.

**DESIGN COMPLIANCE**

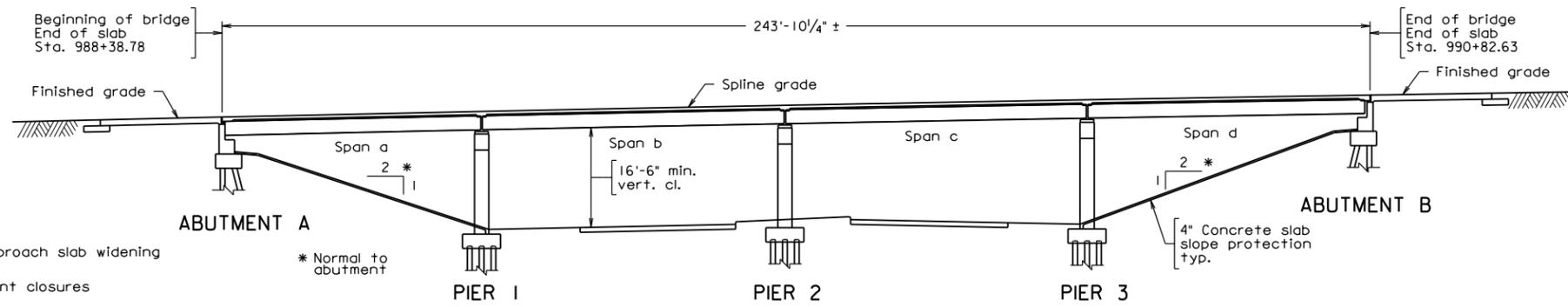
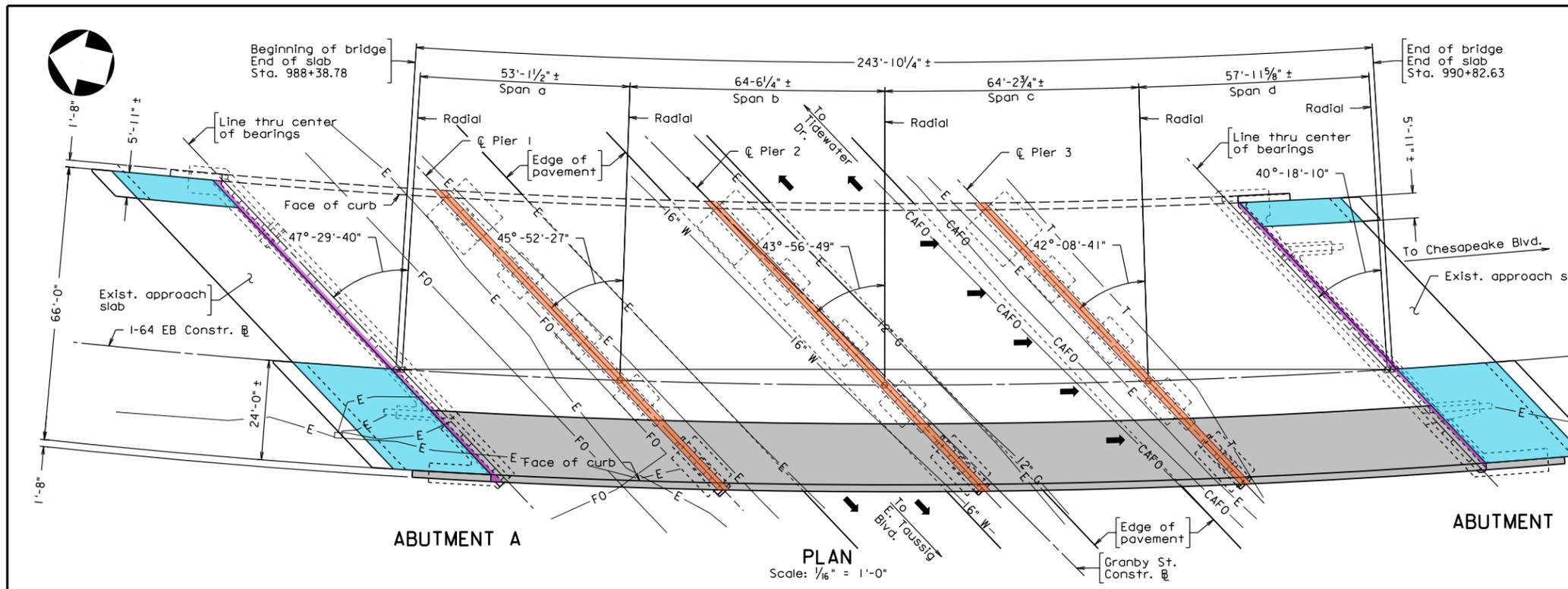
*All bearings are replaced with reinforced elastomeric bearings.*

*Pier joints to be retrofitted for Continuity In Deck.*

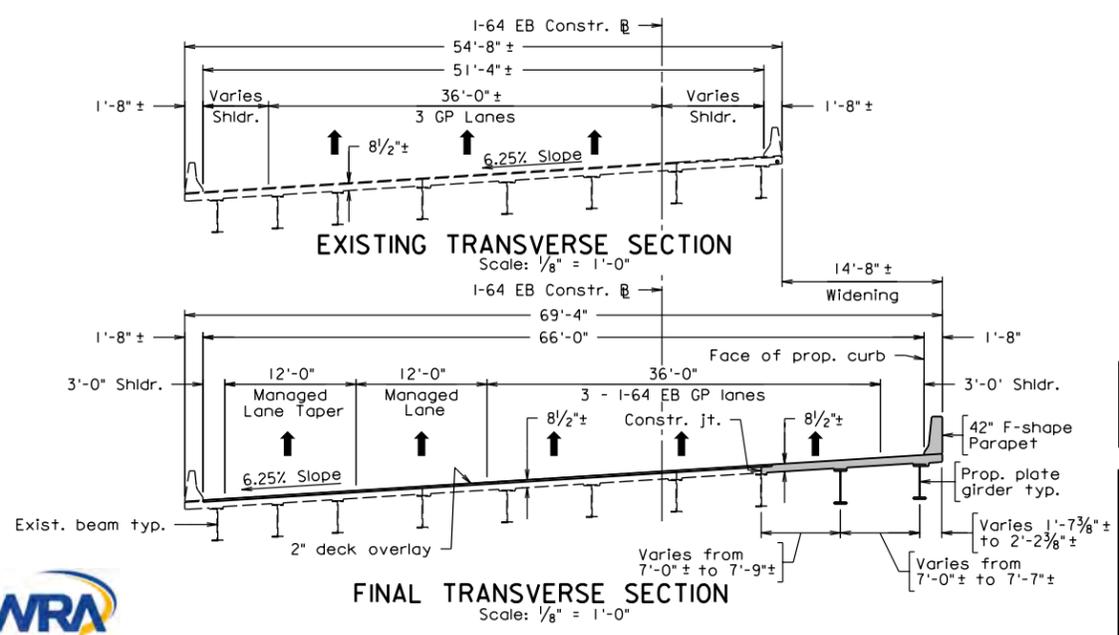
*Abutments to be retrofitted to VA micro-abutments.*

*Approach slabs to be widened.*

*Deck overlay.*



- Legend:**
- Indicates Approach slab widening
  - Indicates Joint closures
  - Indicates Virginia Micro-abutment
  - Indicates bridge widening



RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



**PRELIMINARY PLANS**  
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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

VDOT

COMMONWEALTH OF VIRGINIA  
 DEPARTMENT OF TRANSPORTATION

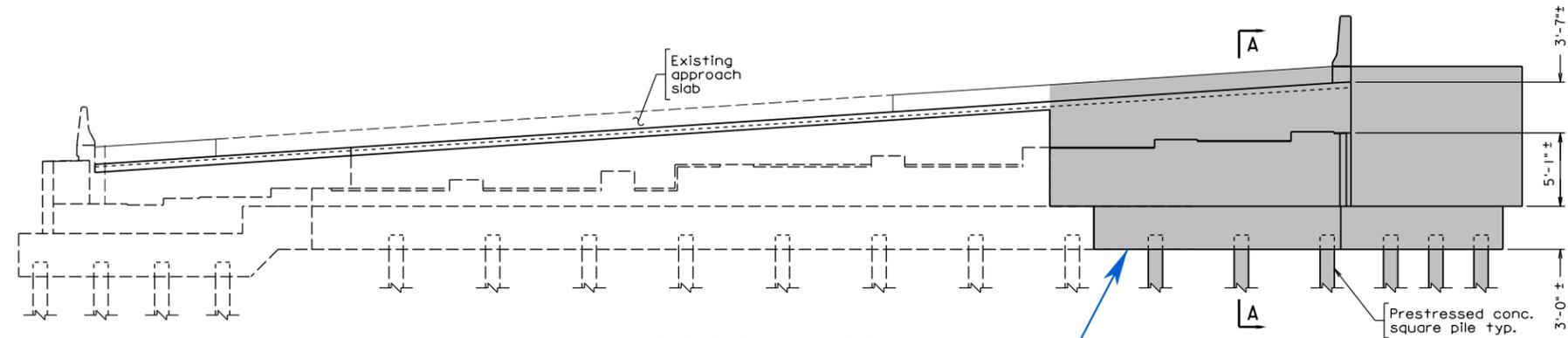
PROPOSED BRIDGE WIDENING  
 I-64 EB OVER GRANBY STREET  
 CITY OF NORFOLK  
 2.63 MI. E. OF RTE. 60 (4th VIEW STREET)  
 PROJ. 0064-122-470, B655

Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_  
 District Project Development Engineer

Approved: \_\_\_\_\_ Date \_\_\_\_\_  
 District Administrator

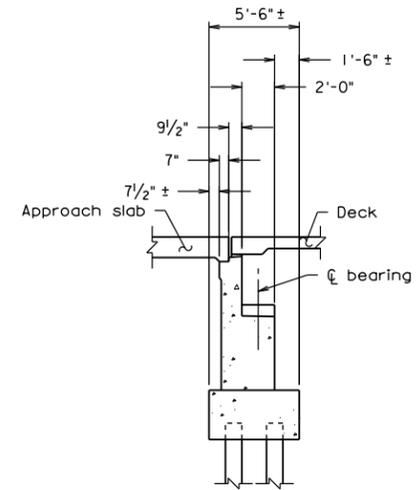
Date: August 17, 2022 © 2022, Commonwealth of Virginia

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT		ROUTE	PROJECT
VA.	NHPP-064-3(520)		64	0064-122-470, B655
				B-02

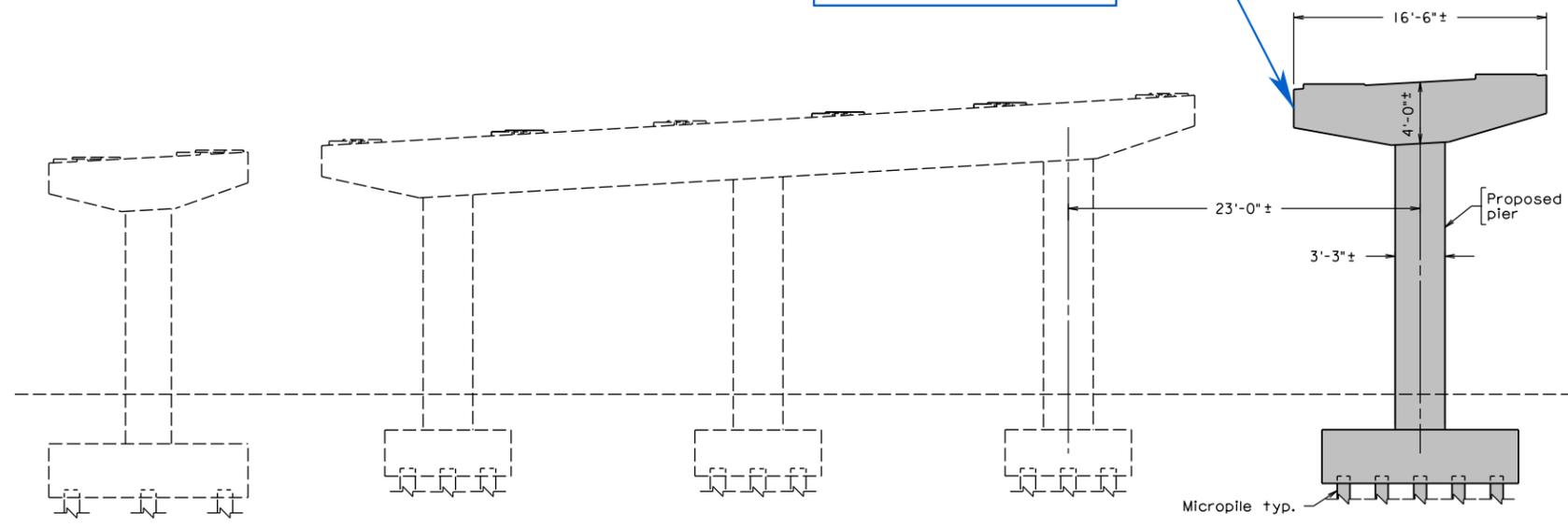


**ABUTMENT ELEVATION**  
Abutment B shown. Abutment A similar.

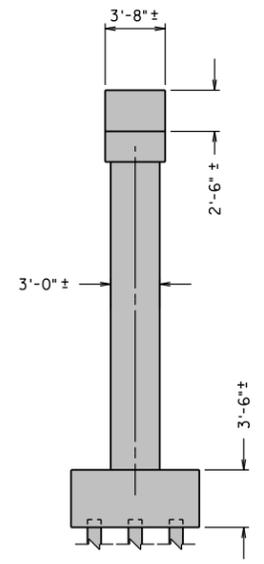
**DESIGN COMPLIANCE**  
Abutment and Pier cap widening per the Manual of the Structure and Bridge Division, Part 2, Chapter 32, Design Aids.



**SECTION A-A**



**PIER ELEVATION**  
Pier 1 shown. Piers 2 and 3 similar.



**END VIEW**  
Pier 1 shown. Piers 2 and 3 similar.

Note:  
For VA micro-abutment and deck continuity at pier details, see sheet B-11.

WHITMAN REQUARDT & ASSOCIATES  
RICHMOND, VA  
STRUCTURAL ENGINEER



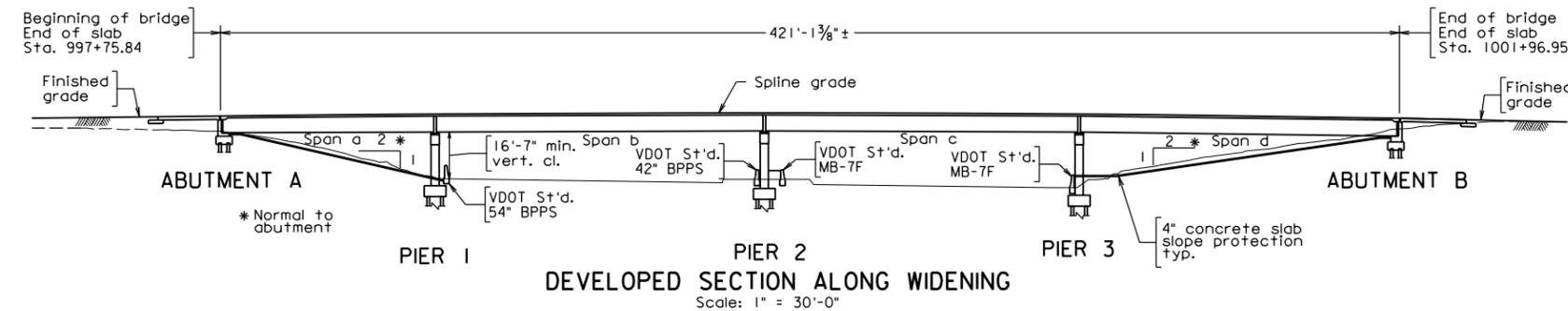
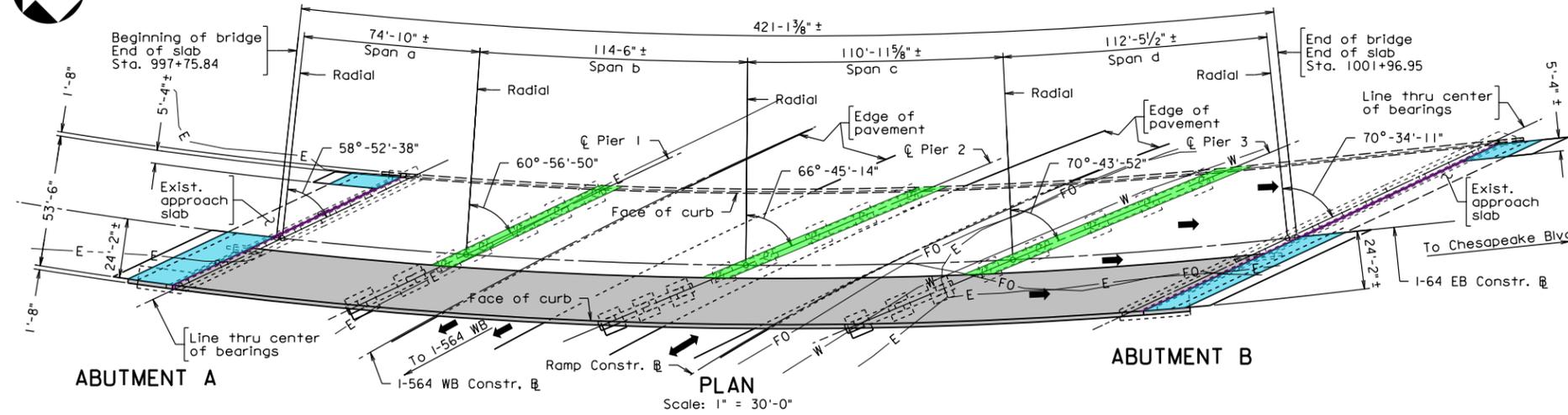
Scale: 3/16" = 1'-0" unless otherwise noted.

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

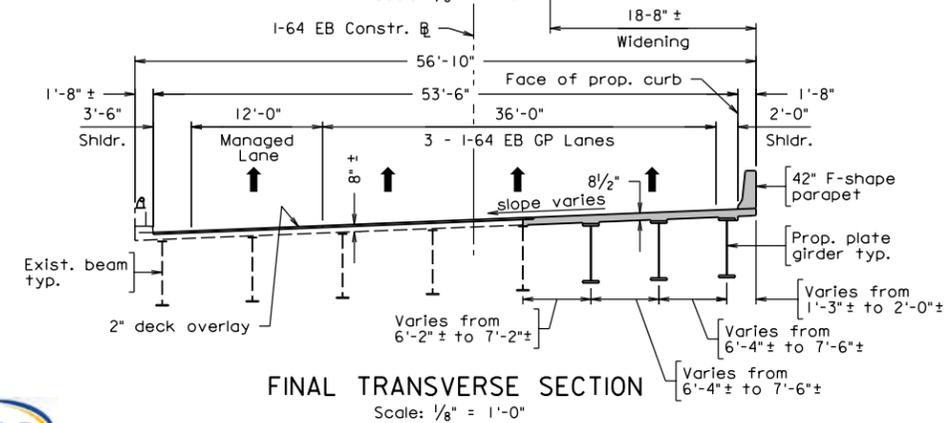
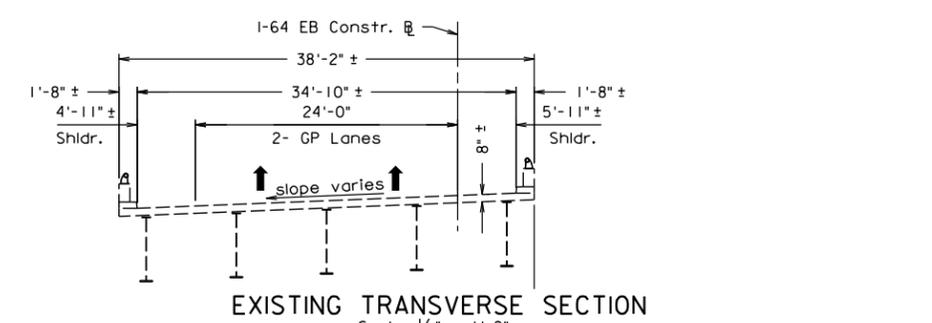
© 2022, Commonwealth of Virginia

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
I-64 EB OVER GRANBY STREET TYPICAL ABUTMENT AND PIER			
No.	Description	Date	Revisions
	Designed: WRA	Date	Plan No.
	Drawn: WRA	Aug. 2022	155-01B
	Checked: WRA		B-02

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT		ROUTE	PROJECT
VA.	NHPP-064-3(520)		64	0064-122-470, B656
Federal Structure No. 00000000020900			FHWA Construction and Scour Code: X271-SN	
Federal Stewardship and Oversight Code: FO			UPC No. 119637	



- Legend:
- Indicates Approach slab widening
  - Indicates joint reconstruction
  - Indicates Virginia Micro-abutment
  - Indicates bridge widening



**DESIGN EXCEPTION(S):**

- Stopping Sight Distance for I-64 GP lane pending VDOT approval.
- Superelevation Rate on existing bridge pending VDOT approval.
- Shoulder Width pending VDOT approval.

**GENERAL NOTES:**

- Width: 53'-6" face-to-face of curbs, including 18'-8"± widening on right of traffic.
- Span layout: 74'-10"± - 114'-6"± 110'-11 1/8"± - 112'-5 1/2" simple steel plate girder spans.
- Capacity: HL-93 loading (widened portion only). HS20-44 for existing.
- Specifications:
  - Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.
  - Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new bridge elements).
  - Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.
- These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.
- Design loading includes 20 psf allowance for construction tolerances and construction methods for new bridge elements.
- Design loading includes 15 psf allowance for future wearing surface for new bridge elements.
- Bridge No. of existing bridge is 122-2873. Plan No. is 155-02.
- The existing structure is designated a Type B structure in accordance with Sec. 411.

**DESIGN COMPLIANCE**

*All bearings are replaced with reinforced elastomeric bearings.*

*Pier Expansion Joint Reconstruction.*

*Abutments to be retrofitted to VA micro-abutments.*

*Approach slabs to be widened.*

*Deck overlay.*

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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

VDOT

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE WIDENING  
I-64 EB OVER I-564  
CITY OF NORFOLK  
0.18 MI. E. OF RTE. 460 (GRANBY STREET)  
PROJ. 0064-122-470, B656

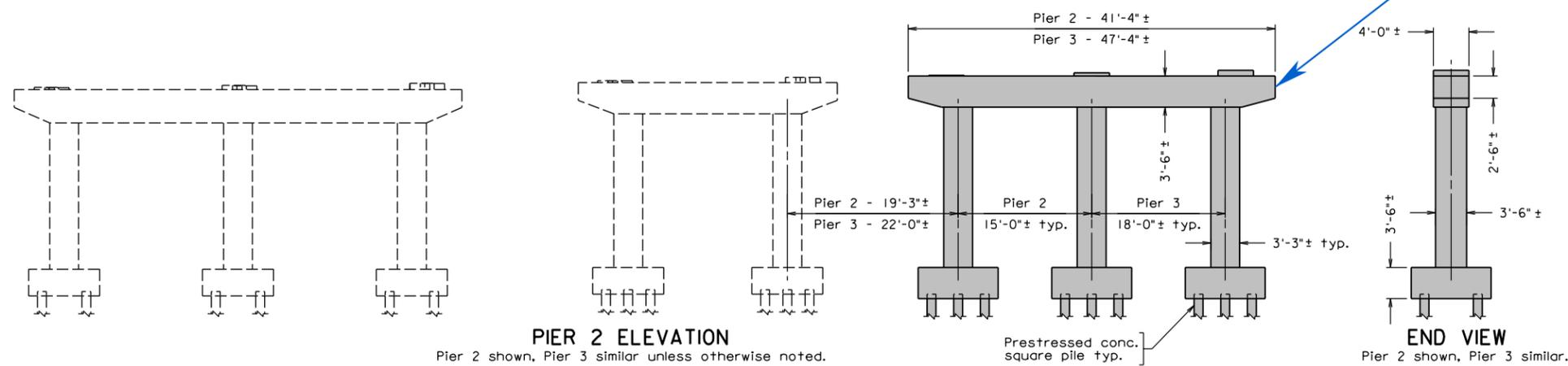
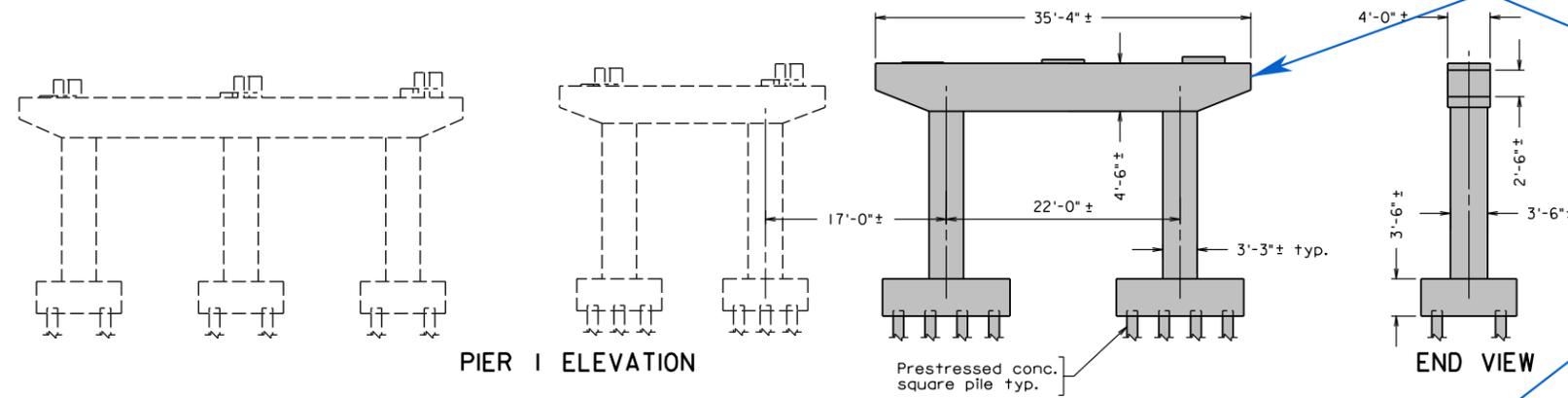
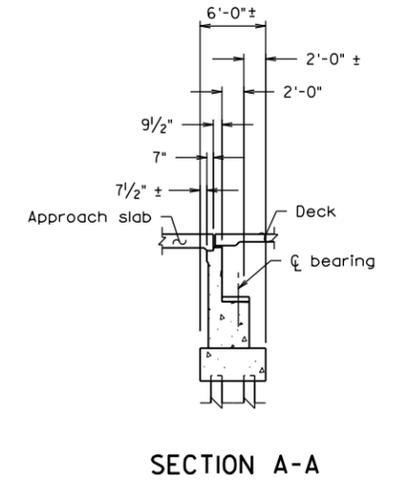
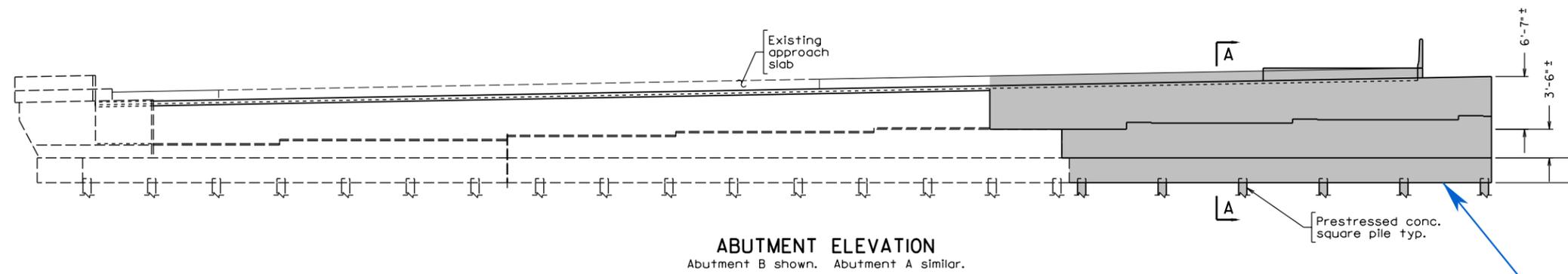
Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_  
District Project Development Engineer

Approved: \_\_\_\_\_ Date \_\_\_\_\_  
District Administrator

155-02A  
Sheet B-03

Date: August 17, 2022 © 2022, Commonwealth of Virginia

STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE	PROJECT
	NHPP-064-3(520)	64	0064-122-470, B656
			B-04



**DESIGN COMPLIANCE**  
Abutment and Pier cap widening per the Manual of the Structure and Bridge Division, Part 2, Chapter 32, Design Aids.

Note:  
For VA micro-abutment details, see sheet B-11.

WHITMAN REQUARDT & ASSOCIATES  
RICHMOND, VA  
STRUCTURAL ENGINEER



Scale: 1/8" = 1'-0" unless otherwise noted.

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
I-64 EB OVER I-564 TYPICAL ABUTMENT AND PIER			
No.	Description	Date	Revisions
	Designed: WRA	Date	Plan No.
	Drawn: WRA	Aug. 2022	155-02A
	Checked: WRA		B-04

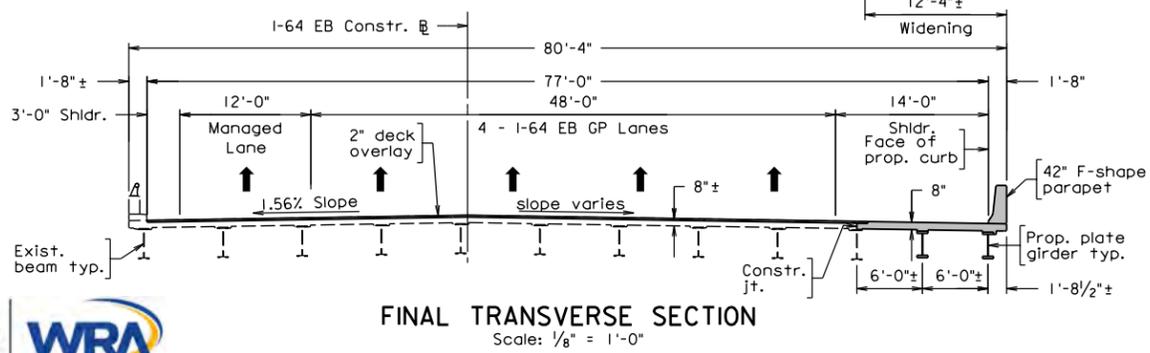
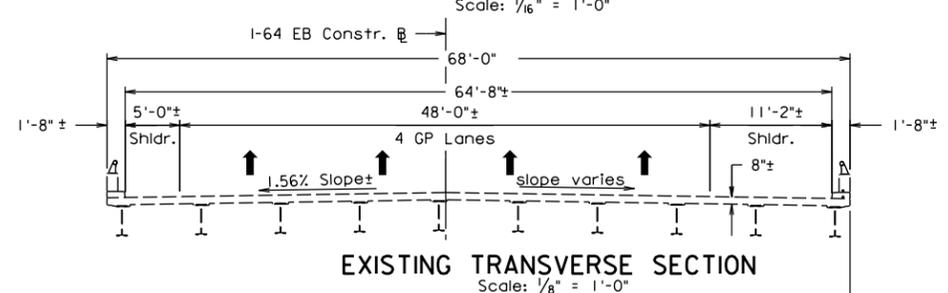
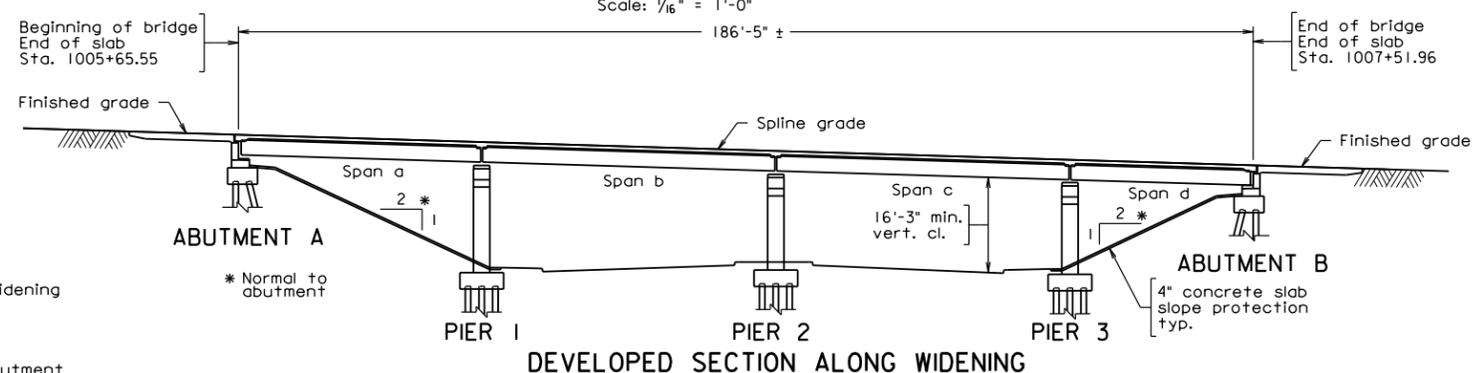
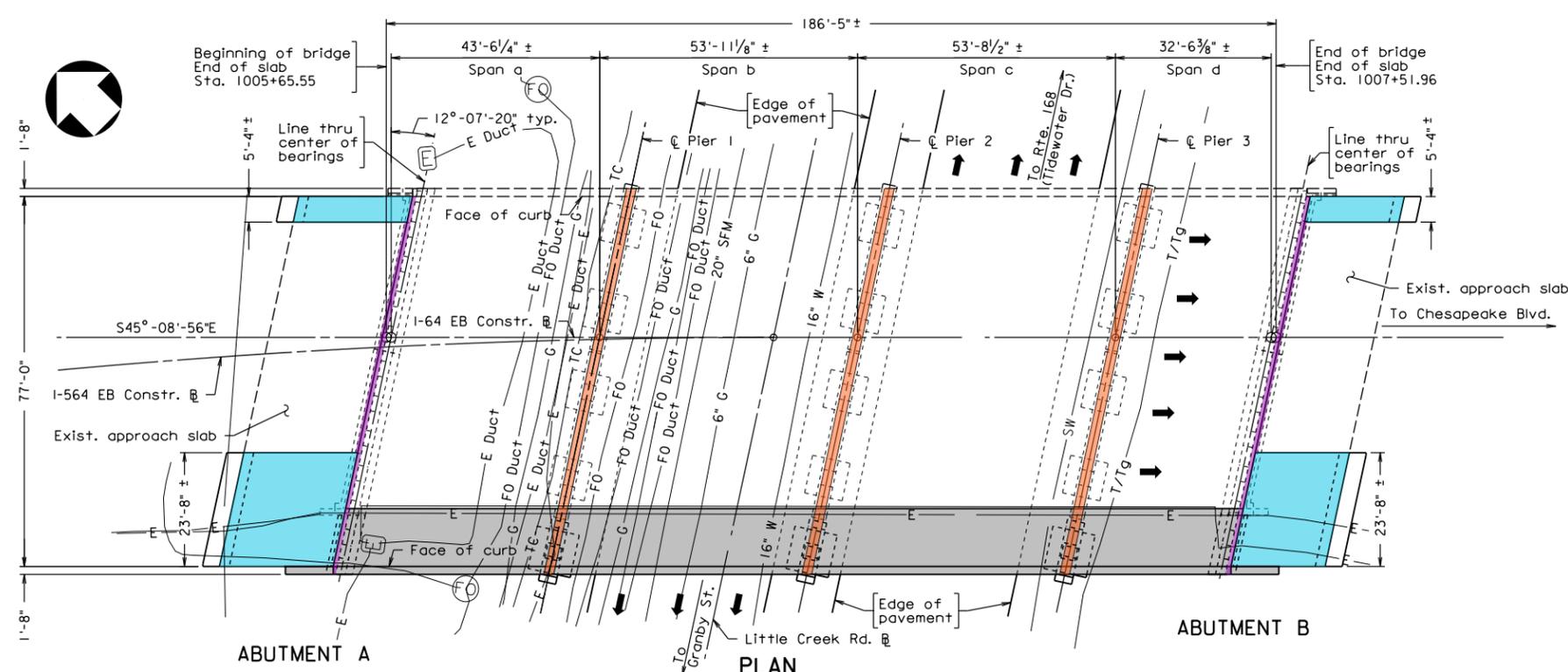
STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE	PROJECT
	NHPP-064-3(520)	64	0064-122-470, B657
Federal Structure No. 00000000020892		FHWA Construction and Scour Code: <b>X271-SN</b>	
Federal Stewardship and Oversight Code: FO		UPC No. 119637	

**DESIGN EXCEPTION(S):**

Shoulder Width pending VDOT approval.  
Vertical Clearance pending VDOT approval.

**GENERAL NOTES:**

Width: 77'-0"+ face-to-face of curbs, including 12'-4"± widening on right of traffic.  
Span layout: 43'-6 1/4"± - 53'-11 1/8"± - 53'-8 1/2"± - 32'-6 3/8"± simple steel plate girder spans.  
Capacity: HL-93 loading (widened portion only). HS20-44 for existing. Specifications:  
Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.  
Design: AASHTO LRF Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new bridge elements).  
Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.  
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.  
Design loading includes 20 psf allowance for construction tolerances and construction methods for new bridge elements.  
Design loading includes 15 psf allowances for future wearing surface for new bridge elements.  
Bridge No. of existing bridge is 2867. Plan No. is 209-05.  
The existing structure is designated a Type B structure in accordance with Sec. 411.



- Legend:
- Indicates Approach slab widening
  - Indicates Joint closures
  - Indicates Virginia Micro-abutment
  - Indicates bridge widening

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



**DESIGN COMPLIANCE**

*All bearings are replaced with reinforced elastomeric bearings.*

*Pier joints to be retrofitted for Continuity In Deck.*

*Abutments to be retrofitted to VA micro-abutments.*

*Approach slabs to be widened.*

*Deck overlay.*

**VDOT**

**COMMONWEALTH OF VIRGINIA**  
**DEPARTMENT OF TRANSPORTATION**  
**PROPOSED BRIDGE WIDENING**  
**I-64 EB OVER LITTLE CREEK ROAD**  
**CITY OF NORFOLK**  
**0.33 MI. EAST OF RTE. 460 (GRANBY STREET)**  
**PROJ. 0064-122-470, B657**

**PRELIMINARY PLANS**  
**THESE PLANS NOT TO BE USED FOR CONSTRUCTION**

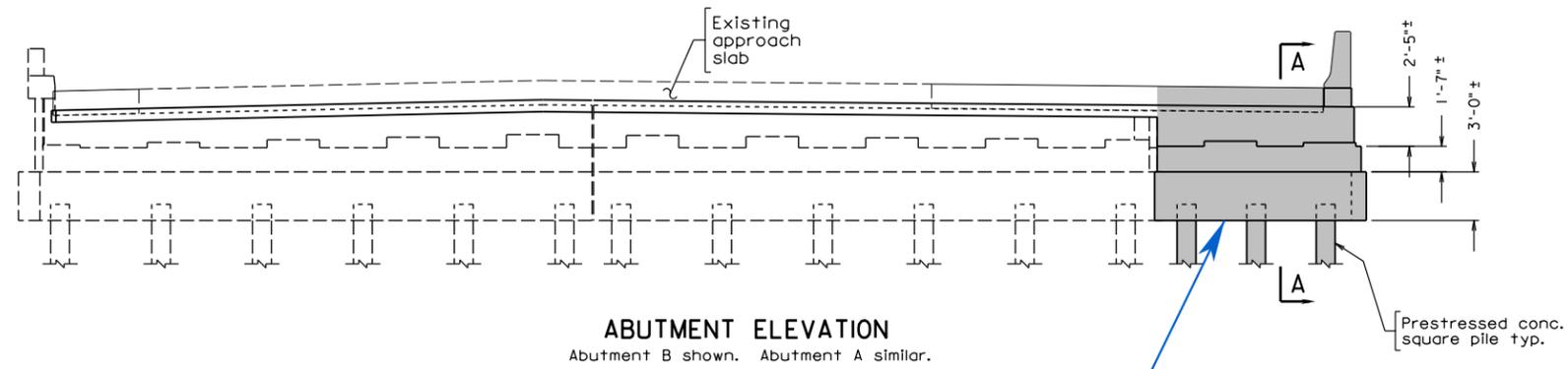
No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_  
District Project Development Engineer

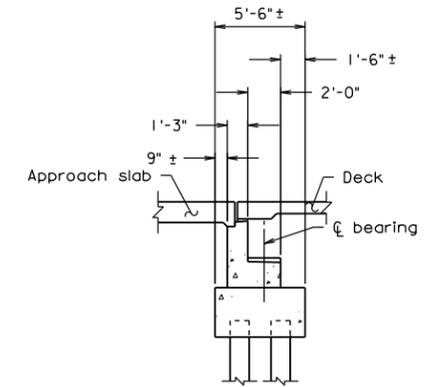
Approved: \_\_\_\_\_ Date \_\_\_\_\_  
District Administrator

Date: August 17, 2022 © 2022, Commonwealth of Virginia  
Sheet B-05

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT		ROUTE	PROJECT
VA.	NHPP-064-3(520)		64	0064-122-470, B657
				B-06



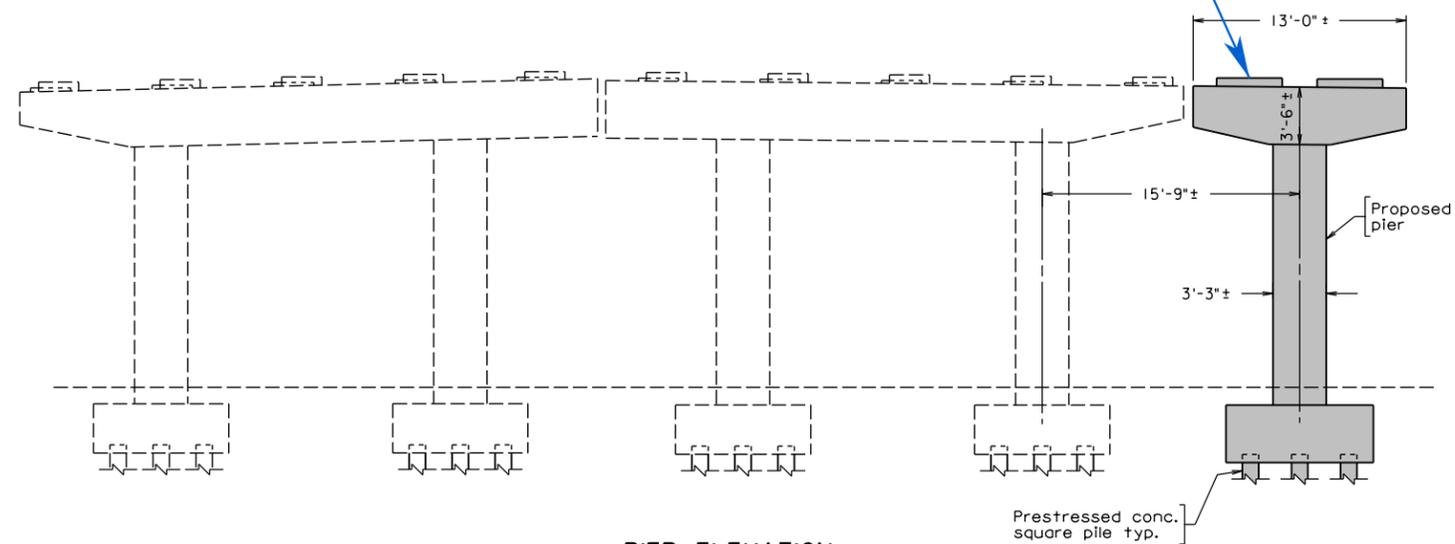
**ABUTMENT ELEVATION**  
Abutment B shown. Abutment A similar.



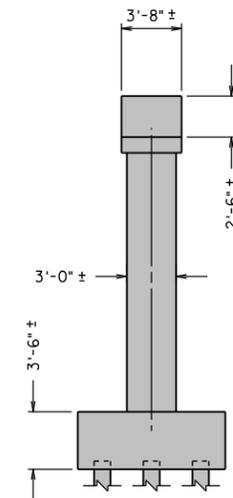
**SECTION A-A**

**DESIGN COMPLIANCE**

Abutment and Pier cap widening per the Manual of the Structure and Bridge Division, Part 2, Chapter 32, Design Aids.



**PIER ELEVATION**  
Pier 1 shown. Piers 2 and 3 similar.



**END VIEW**

Pier 1 shown. Piers 2 and 3 similar.

Note:  
For VA micro-abutment and deck continuity at pier details, see sheet B-11.

WHITMAN REQUARDT & ASSOCIATES  
RICHMOND, VA  
STRUCTURAL ENGINEER



Scale: 3/16" = 1'-0" unless otherwise noted.

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
I-64 EB OVER LITTLE CREEK RD. TYPICAL ABUTMENT AND PIER			
No.	Description	Date	Revisions
Designed: WRA	Date	Plan No.	Sheet No.
Drawn: WRA	Aug. 2022	209-05A	B-06
Checked: WRA			

STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE	PROJECT
	NHPP-064-3(520)	64	0064-122-470, B653
Federal Structure No. 00000000020841		FHWA Construction and Scour Code: X271-SN	
Federal Stewardship and Oversight Code: FO		UPC No. 119637	

**DESIGN EXCEPTION(S):**  
Shoulder Width pending VDOT approval.  
Vertical Clearance pending VDOT approval.

**GENERAL NOTES:**

Width: 68'-0" face-to-face of curbs includes widening of 11'-8"± on the right side of traffic.

Span layout: 39'-6"± - 67'-6¾"± - 59'-11¾"± - 56'-9"±  
Simple steel plate girder spans.

Capacity: HL-93 loading (widened portion only). HS20-44 for existing.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new bridge elements).

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.

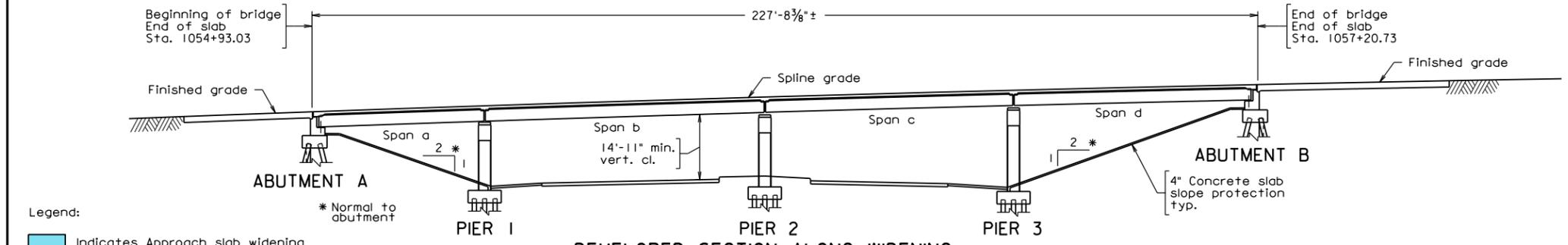
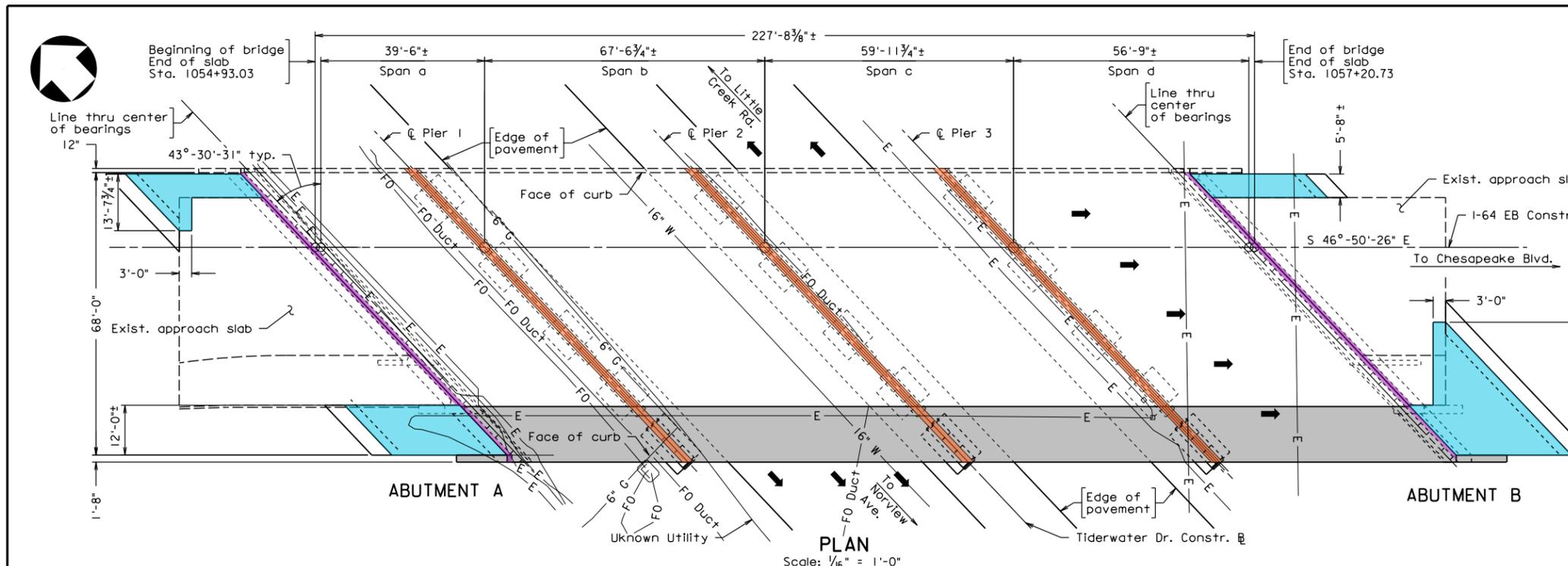
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

Design loading includes 20 psf allowance for construction tolerances and construction methods for new bridge elements.

Design loading includes 15 psf allowance for future wearing surface for new bridge elements.

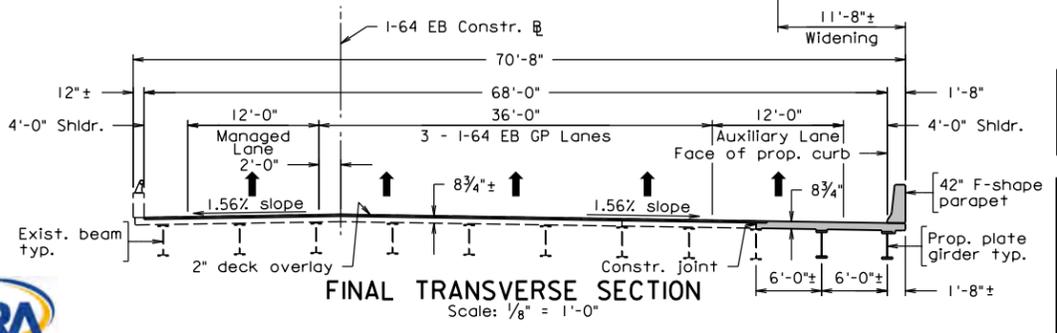
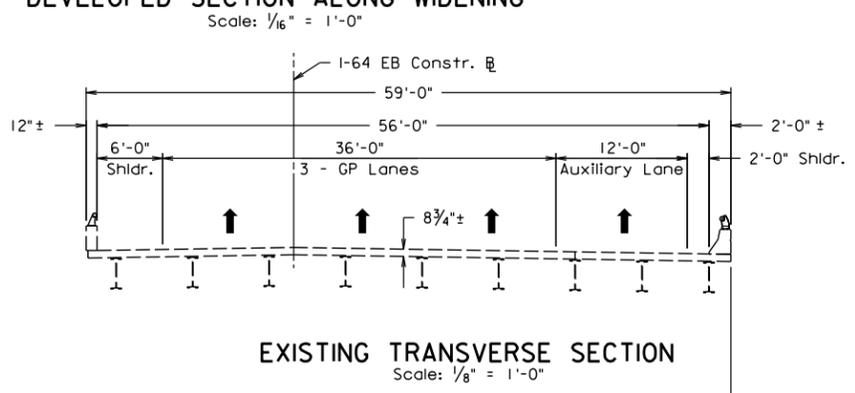
Bridge No. of existing bridge is 2814. Plan No. is 155-04, 155-04A, 155-04B, and 155-04C.

The existing structure is designated a Type B structure in accordance with Sec. 411.



- Legend:
- Indicates Approach slab widening
  - Indicates Joint closures
  - Indicates Virginia Micro-abutment
  - Indicates bridge widening

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



**PRELIMINARY PLANS**  
**THESE PLANS NOT TO BE USED FOR CONSTRUCTION**

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

**DESIGN COMPLIANCE**

*All bearings are replaced with reinforced elastomeric bearings.*

*Pier joints to be retrofitted for Continuity In Deck.*

*Abutments to be retrofitted to VA micro-abutments.*

*Approach slabs to be widened.*

*Deck overlay.*

**VDOT**

**COMMONWEALTH OF VIRGINIA**  
**DEPARTMENT OF TRANSPORTATION**  
**PROPOSED BRIDGE WIDENING ON**  
**I-64 EB OVER TIDEWATER DRIVE**  
**CITY OF NORFOLK**  
**1.0 MI. NW OF CHESAPEAKE BLVD.**  
**PROJ. 0064-122-470, B653**

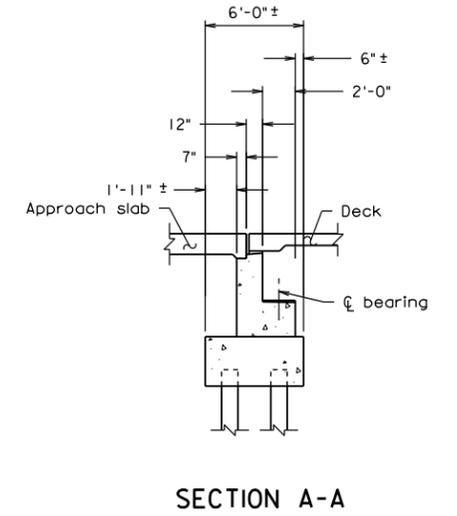
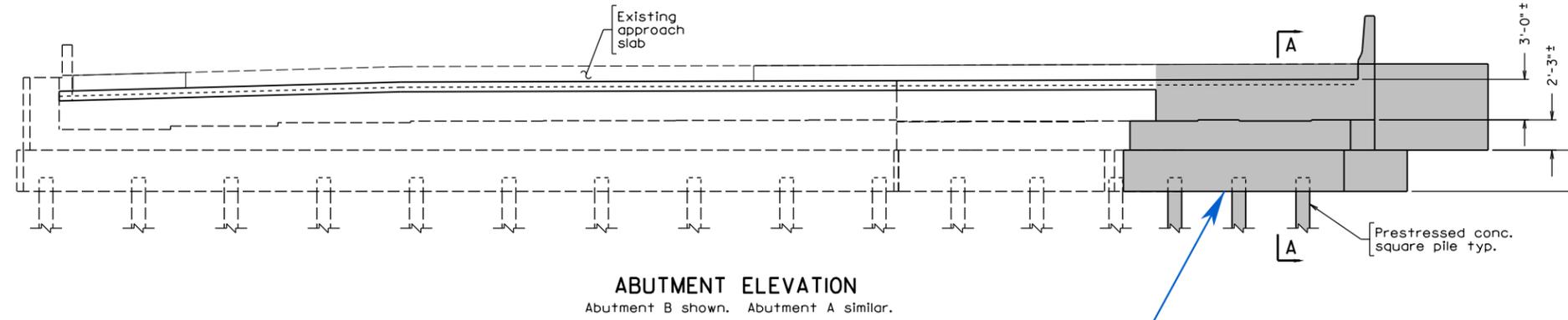
Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_  
District Project Development Engineer

Approved: \_\_\_\_\_ Date \_\_\_\_\_  
District Administrator

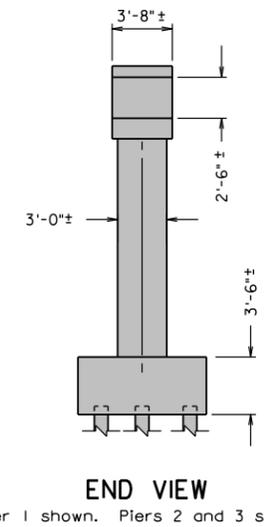
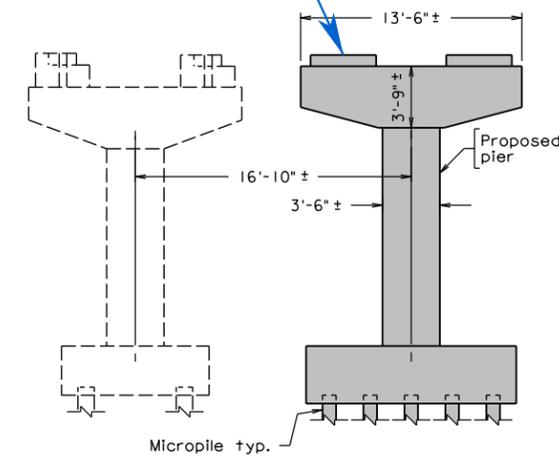
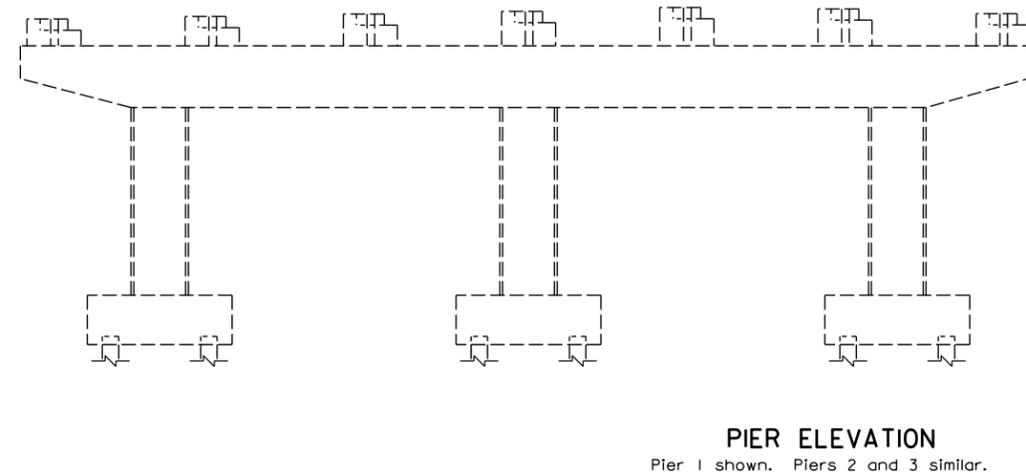
Date: August 17, 2022 © 2022, Commonwealth of Virginia

155-04D  
Sheet B-07

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.
VA.	-----	64	0064-122-470, B653	B-08



**DESIGN COMPLIANCE**  
Abutment and Pier cap widening per the Manual of the Structure and Bridge Division, Part 2, Chapter 32, Design Aids.



Notes:  
For deck continuity at pier details, see sheet B-11.  
For VA micro-abutment details, see sheet B-12.



WHITMAN REQUARDT & ASSOCIATES  
RICHMOND, VA  
STRUCTURAL ENGINEER

Scale: 1" = 1'-0" unless otherwise noted.

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
<b>I-64 EB OVER TIDEWATER DR. TYPICAL ABUTMENT AND PIER</b>			
No.	Description	Date	Revisions
Designed: WRA	Date	Plan No.	Sheet No.
Drawn: WRA	Aug. 2022	155-04D	B-08
Checked: WRA			

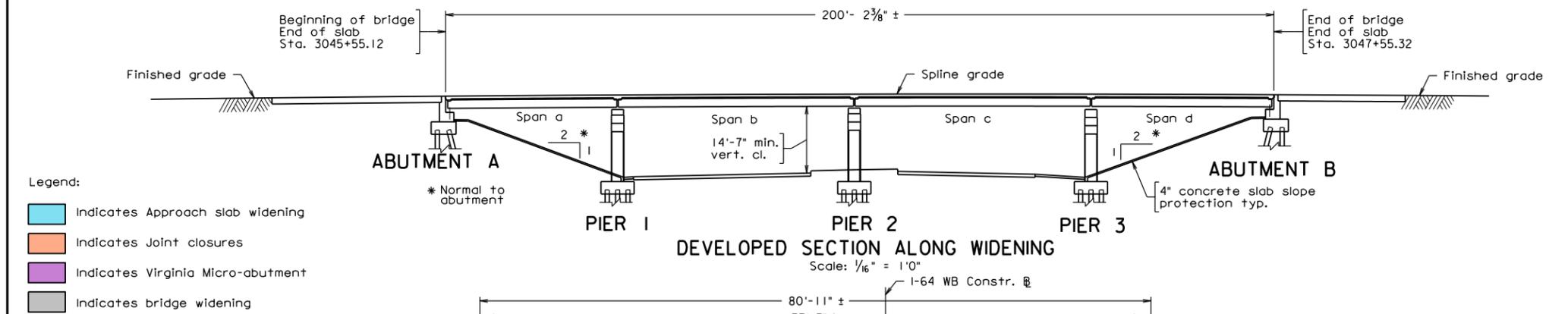
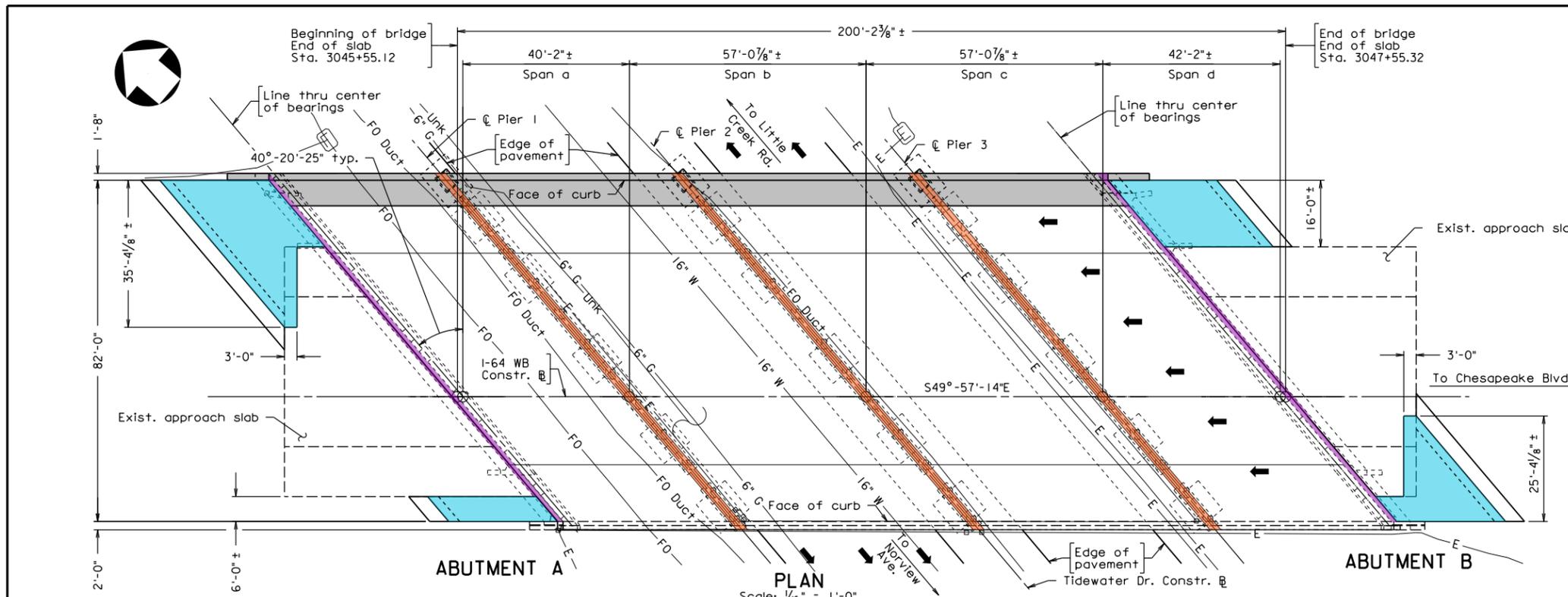
STATE	FEDERAL AID	STATE	SHEET NO.
VA.	NHPP-064-3(520)	64	0064-122-470, B654
Federal Structure No. 00000000020843		FHWA Construction and Scour Code: <b>X271-SN</b>	
Federal Stewardship and Oversight Code: F0		UPC No. 119637	

**DESIGN EXCEPTION(S):**

Shoulder width pending VDOT approval.  
Vertical clearance pending VDOT approval.

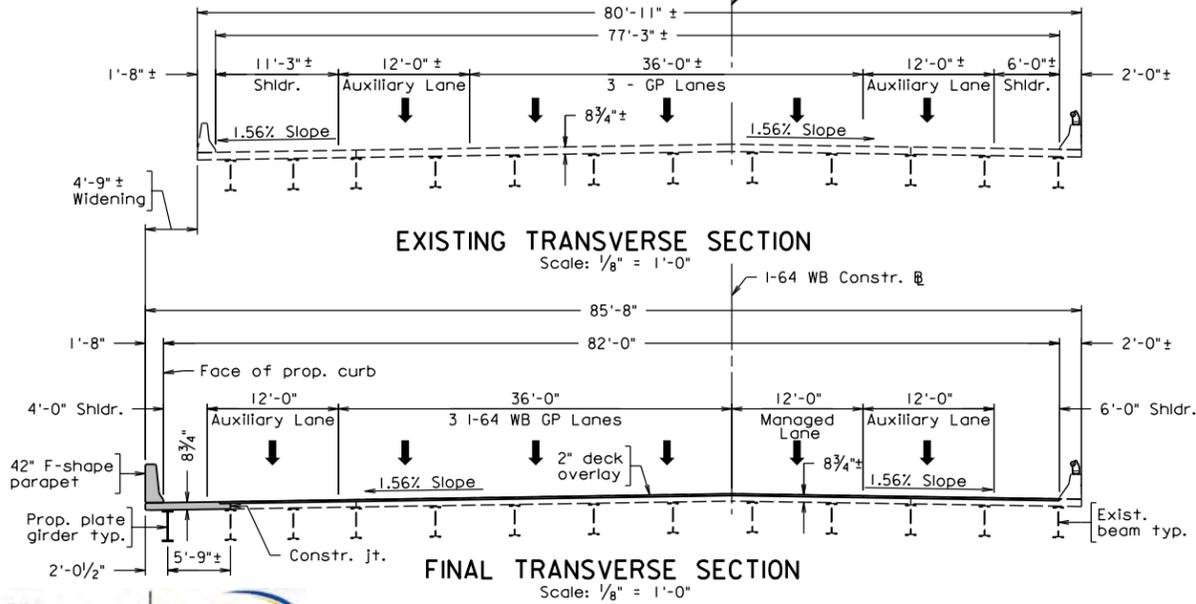
**GENERAL NOTES:**

Width: 82'-0" face-to-face of curbs includes widening of 4'-9"± on the left side of traffic.  
Span layout: 40'-2"±- 57'-0 7/8"±- 57'-0 7/8"±- 42'-2"±  
Simple steel plate girder spans.  
Capacity: HL-93 loading (widened portion only). HS20-44 for existing.  
Specifications:  
Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.  
Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new bridge elements).  
Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.  
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.  
Design loading includes 20 psf allowance for construction tolerances and construction methods for new bridge elements.  
Design loading includes 15 psf allowance for future wearing surface for new bridge elements.  
Bridge No. of existing bridge is 2815. Plan No. is 155-04, 155-04A, 155-05B, and 155-05C.  
The existing structure is designated a Type B structure in accordance with Sec. 411.



- Legend:
- Indicates Approach slab widening
  - Indicates Joint closures
  - Indicates Virginia Micro-abutment
  - Indicates bridge widening

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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

**DESIGN COMPLIANCE**

All bearings are replaced with reinforced elastomeric bearings.

Pier joints to be retrofitted for Continuity In Deck.

Abutments to be retrofitted to VA micro-abutments.

Approach slabs to be widened.

Deck overlay.

**VDOT**  
COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF TRANSPORTATION

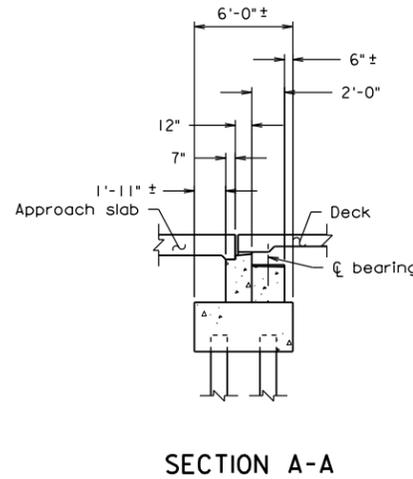
PROPOSED BRIDGE WIDENING ON  
I-64 WB OVER TIDEWATER DRIVE  
CITY OF NORFOLK  
1.0 MI. NW OF CHESAPEAKE BLVD.  
PROJ. 0064-122-470, B654

Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_  
District Project Development Engineer

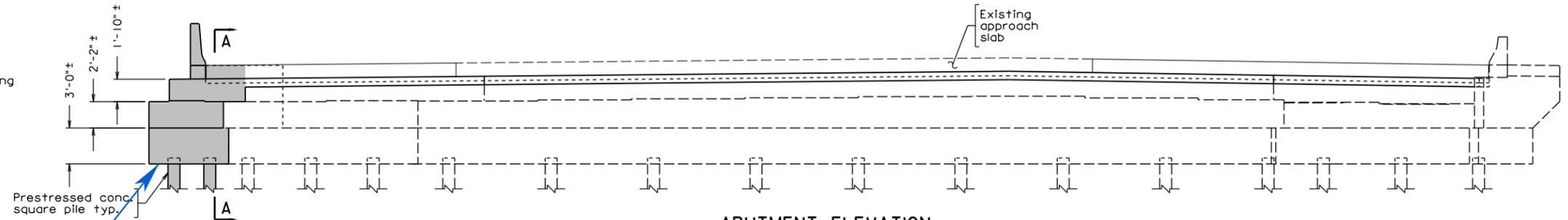
Approved: \_\_\_\_\_ Date \_\_\_\_\_  
District Administrator

Date: August 17, 2022 © 2022, Commonwealth of Virginia  
155-04E  
Sheet B-09

STATE	FEDERAL AID		STATE		SHEET
ROUTE	PROJECT		ROUTE	PROJECT	NO.
VA.	NHPP-064-3(520)		64	0064-122-470, B654	B-10



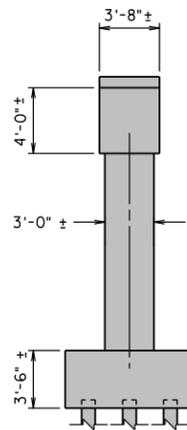
SECTION A-A



ABUTMENT ELEVATION  
Abutment B shown. Abutment A similar.

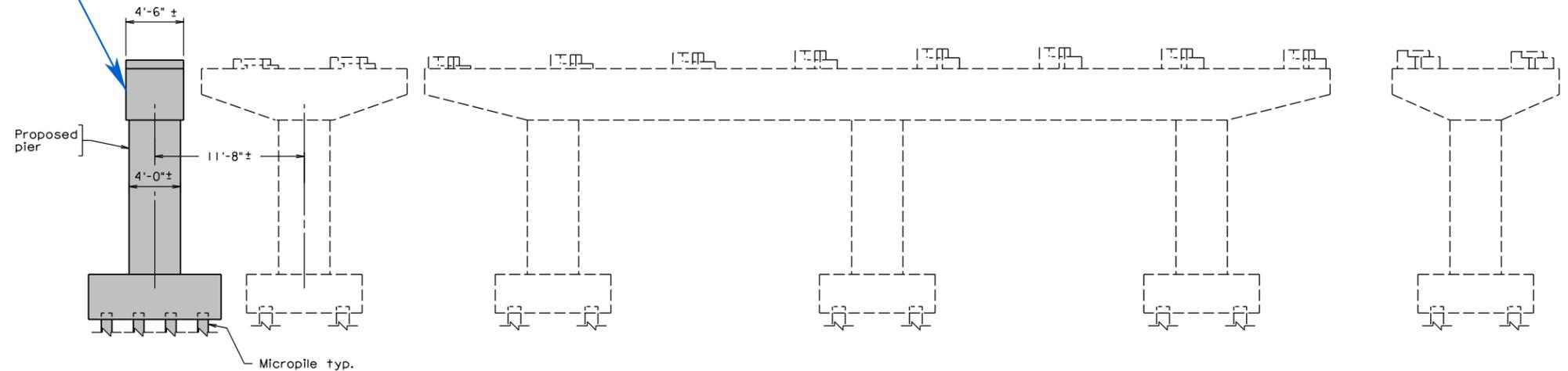
**DESIGN COMPLIANCE**

Abutment and Pier cap widening per the Manual of the Structure and Bridge Division, Part 2, Chapter 32, Design Aids.



END VIEW

Pier 1 shown. Piers 2 and 3 similar.



PIER ELEVATION

Pier 1 shown. Piers 2 and 3 similar.

Notes:  
For deck continuity at pier details, see sheet B-11.  
For VA micro-abutment details, see sheet B-12.



WHITMAN REQUARDT & ASSOCIATES  
RICHMOND, VA  
STRUCTURAL ENGINEER

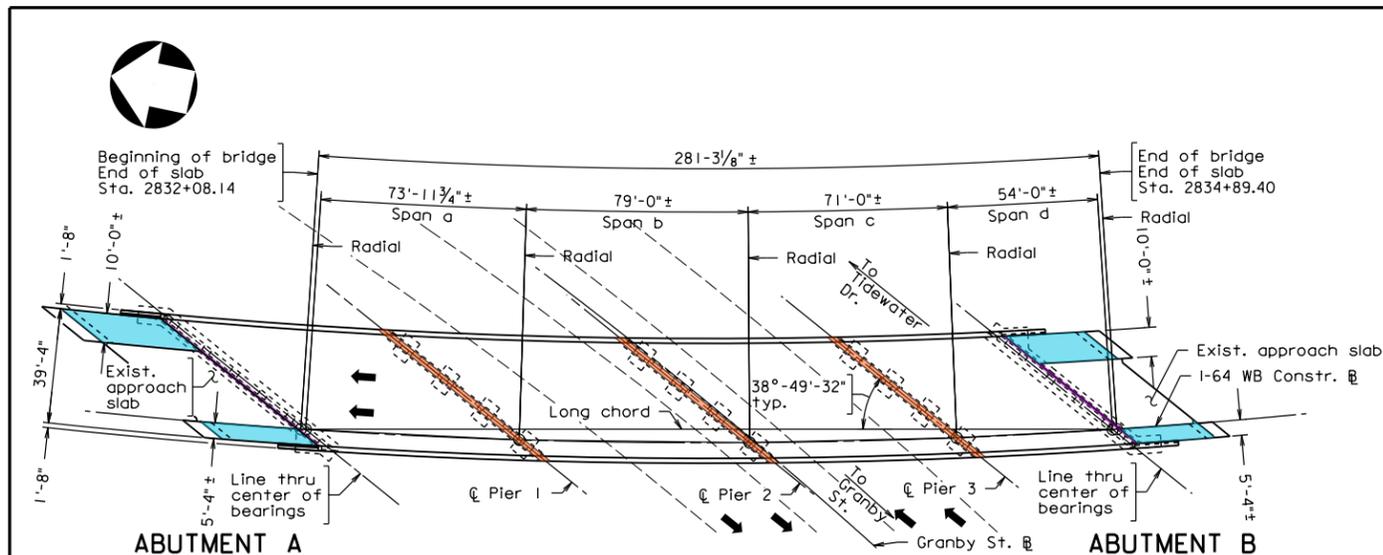
Scale: 3/16" = 1'-0" unless otherwise noted.

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

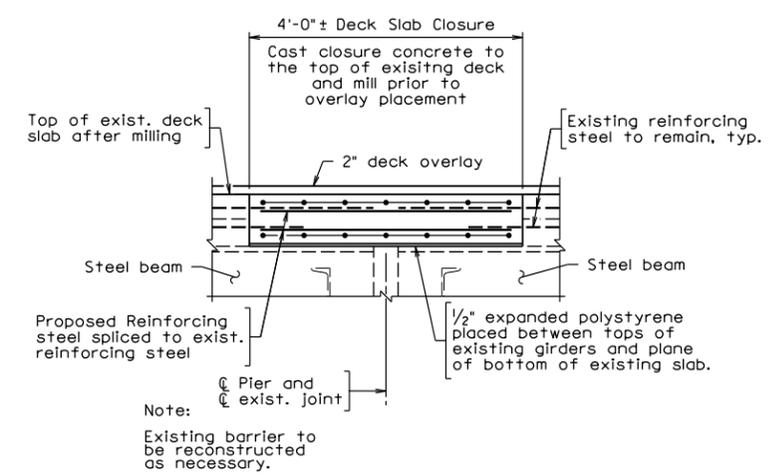
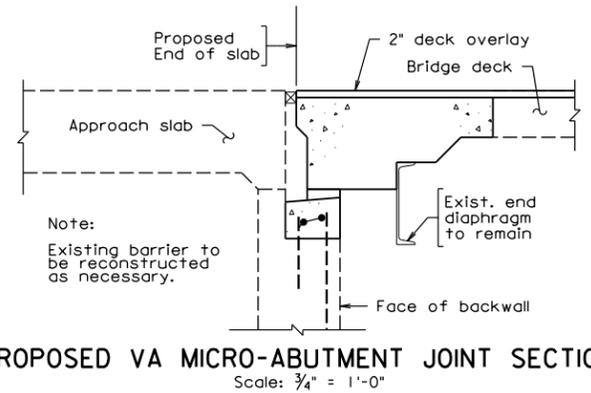
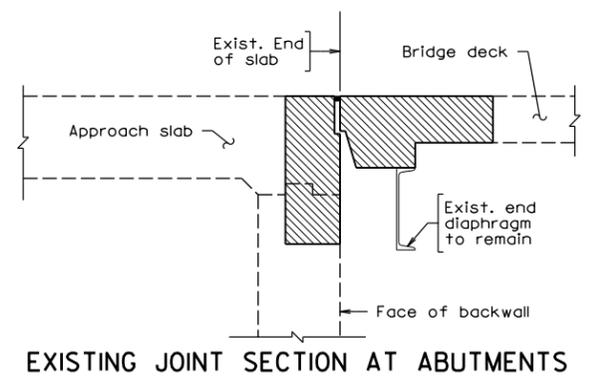
© 2022, Commonwealth of Virginia

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
I-64 WB OVER TIDEWATER DR. TYPICAL ABUTMENT AND PIER			
No.	Description	Date	Revisions
Designed: WRA	Date	Plan No.	Sheet No.
Drawn: WRA	Aug. 2022	155-04E	B-10
Checked: WRA			

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-064-3(520)	64	0064-122-470
Federal Structure No.		FHWA Construction and Scour Code: <b>X271-SN</b>	
Federal Stewardship and Oversight Code: F0		UPC No. 119637	

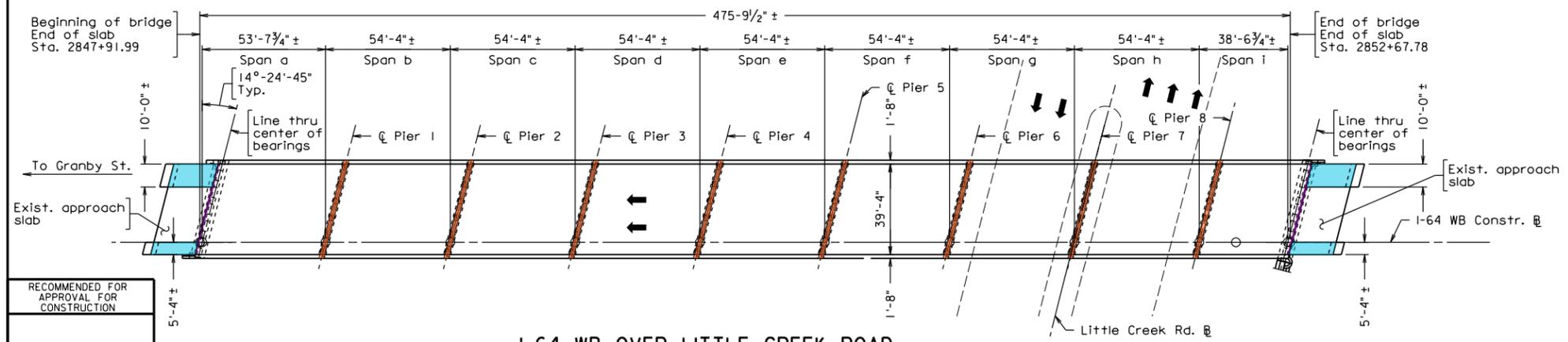


**GENERAL NOTES:**  
 Width: 39'-4" face-to-face of curbs.  
 Span layout: 73'-4", 79'-1", 71'-1", and 53'-7" Simple Rolled steel beam spans.  
 Capacity: HS20-44 loading and alternate military loading.  
 Specifications:  
 Construction: Virginia Department of Highways Road and Bridge Specifications, 2020.  
 Design: AASHTO Standard Specifications for Highway Bridges, 1961 and Interim Specifications thru 1964.  
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.

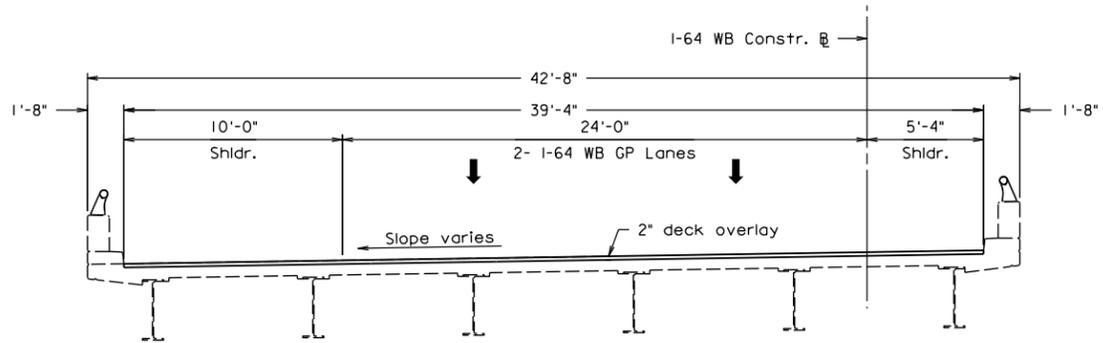


**DESIGN COMPLIANCE**

All bearings are replaced with reinforced elastomeric bearings.  
 Pier joints to be retrofitted for Continuity in Deck.  
 Abutments to be retrofitted to VA micro-abutments.  
 Approach slabs to be widened.  
 Deck overlay.



**GENERAL NOTES:**  
 Width: 39'-4" face-to-face of curbs.  
 Span layout: 53'-7 3/4", 7 - 54'-4", and 38'-6 3/4" Simple Rolled steel beam spans  
 Capacity: HS20-44 loading and alternate military loading.  
 Specifications:  
 Construction: Virginia Department of Highways Road and Bridge Specifications, 2020.  
 Design: AASHTO Standard Specifications for Highway Bridges, 1961 and Interim Specifications thru 1964.  
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.



I-64 WB over Little Creek Road shown, I-64 WB over Granby Street similar.  
 Scale: 1/4" = 1'-0"

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



**PRELIMINARY PLANS**  
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: 1" = 30'-0" unless otherwise noted.

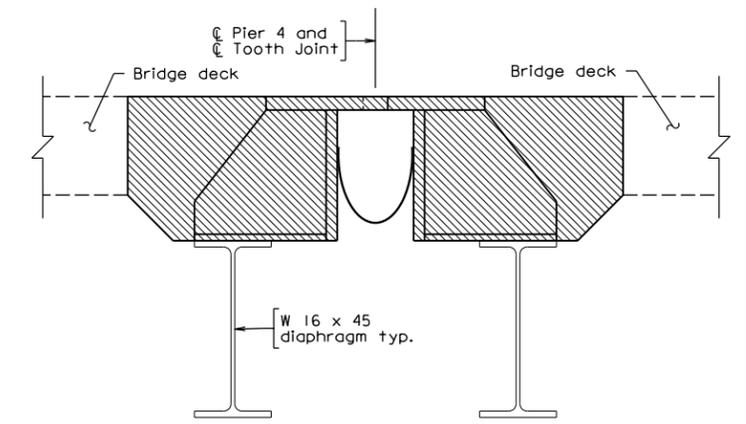
**VDOT**  
 COMMONWEALTH OF VIRGINIA  
 DEPARTMENT OF TRANSPORTATION  
 PROPOSED BRIDGE REHABILITATION ON  
 I-64 WB OVER GRANBY STREET AND  
 I-64 WB OVER LITTLE CREEK ROAD  
 CITY OF NORFOLK  
 PROJ. 0064-122-470

Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_  
 District Project Development Engineer

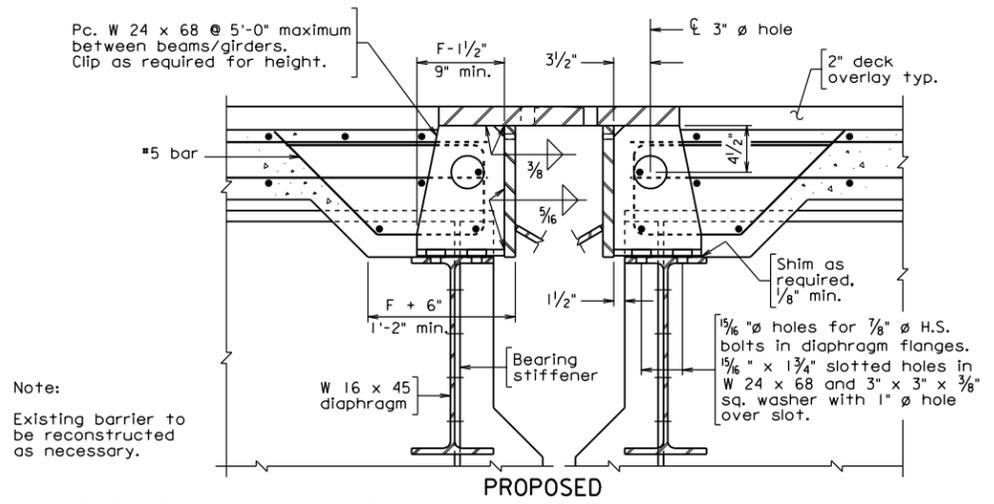
Approved: \_\_\_\_\_ Date \_\_\_\_\_  
 District Administrator

Date: August 17, 2022 © 2022, Commonwealth of Virginia Sheet B-11

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.
VA.	NHPP-064-3(520)	64	0064-122-470, B6XXX	B-12
Federal Structure No. 000000000020900			FHWA Construction and Scour Code:	X271-SN
Federal Stewardship and Oversight Code: F0			UPC No. 119637	



EXISTING



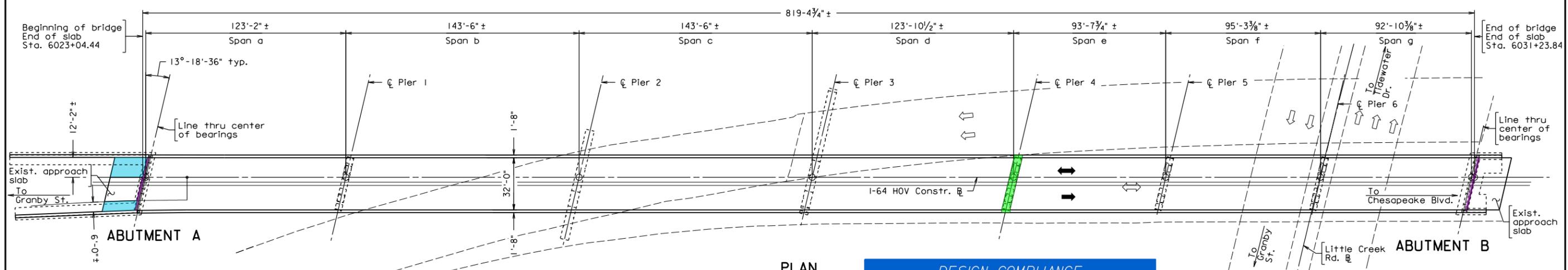
PROPOSED

Note:  
Existing barrier to be reconstructed as necessary.

PROPOSED TOOTH JOINT REPLACEMENT AT PIER 4

Not to scale

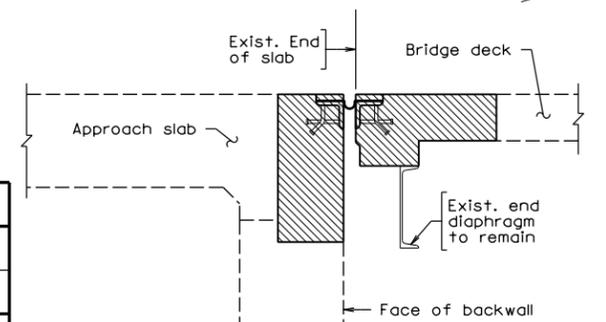
**GENERAL NOTES:**  
 Width: 32'-0" face-to-face of curbs.  
 Span layout: 123'-2", 2 - 143'-6", 123'-10", 93'-8", 95'-3", and 92'-10"  
 Steel plate girder spans  
 Capacity: HS20-44 loading and alternate military loading.  
 Specifications:  
 Construction: Virginia Department of Highways Road and Bridge Specifications, 2020.  
 Design: AASHTO Standard Specifications for Highway Bridges, 1989 and VDOT modifications.  
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revision.



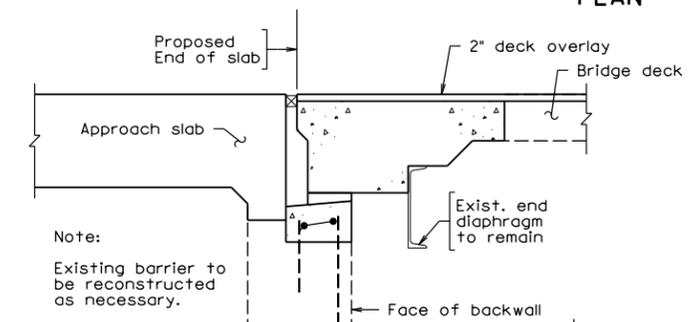
PLAN

**DESIGN COMPLIANCE**

All bearings are replaced with reinforced elastomeric bearings.  
 Pier 4 joint replaced with new tooth joint.  
 Abutments to be retrofitted to VA micro-abutments.  
 Approach slab to be widened at Abutment A.  
 Deck overlay.



EXISTING

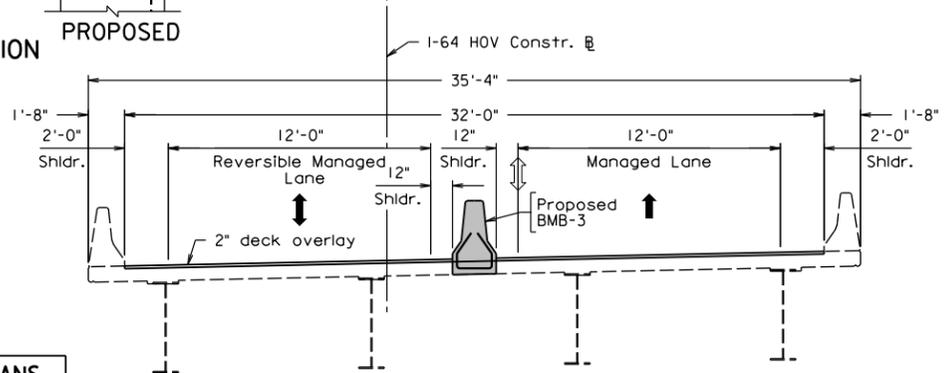


PROPOSED

VA MICRO-ABUTMENT JOINT SECTION

Scale: 3/4" = 1'-0"

- Legend:
- Indicates Approach slab widening
  - Indicates Virginia Micro-abutment
  - Indicates Remove and replace Tooth Joint
  - Indicates portion of structure to be removed.
  - Indicates Existing traffic flow configuration.
  - Indicates Proposed traffic flow configuration.



TRANSVERSE SECTION

Scale: 1/4" = 1'-0"

Scale: 1" = 30'-0" unless otherwise noted.

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



PRELIMINARY PLANS  
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

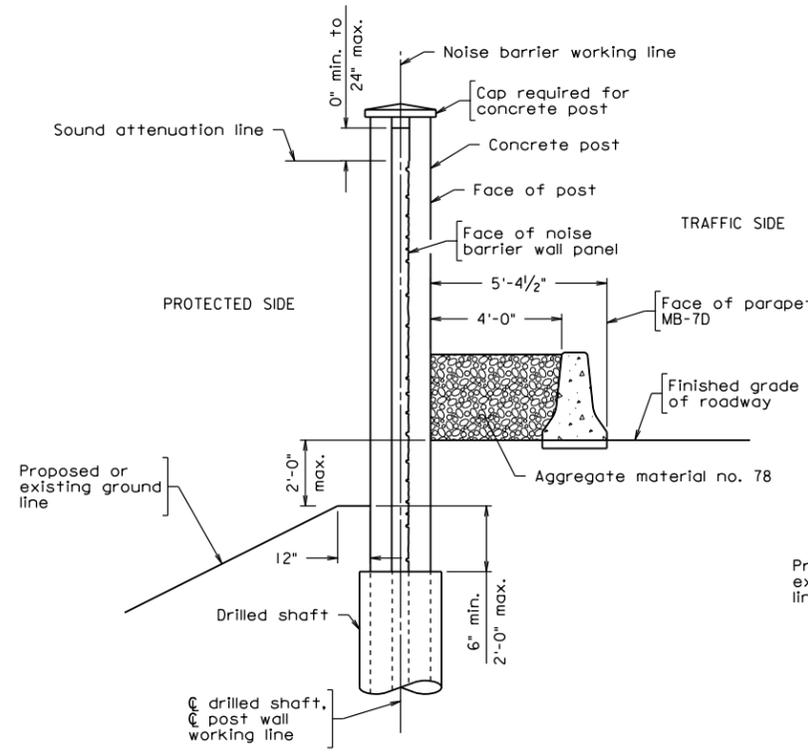
**VDOT**  
 COMMONWEALTH OF VIRGINIA  
 DEPARTMENT OF TRANSPORTATION  
 PROPOSED BRIDGE REHABILITATION ON  
 I-64 HOV OVER LITTLE CREEK ROAD AND I-564 WB  
 CITY OF NORFOLK  
 0.9 MI. W. OF TIDEWATER DRIVE  
 PROJ. 0064-120-470, B6XXX

Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_  
 District Project Development Engineer

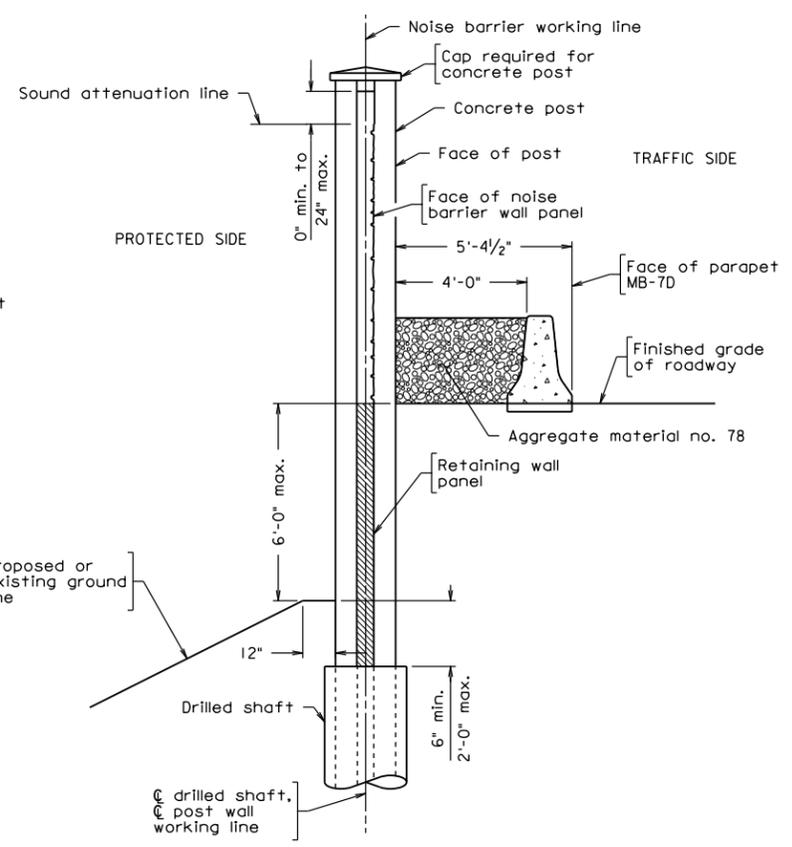
Approved: \_\_\_\_\_ Date \_\_\_\_\_  
 District Administrator

Date: August 17, 2022 © 2022, Commonwealth of Virginia  
 268-10A Sheet B-12

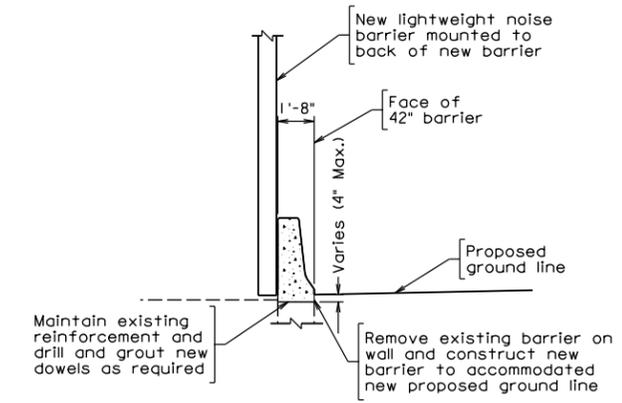
STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.
VA.		64	0064-122-470	B-13



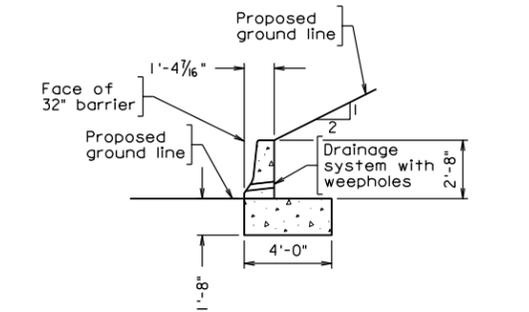
**NOISE BARRIER  
TYPICAL SECTION  
W-1**



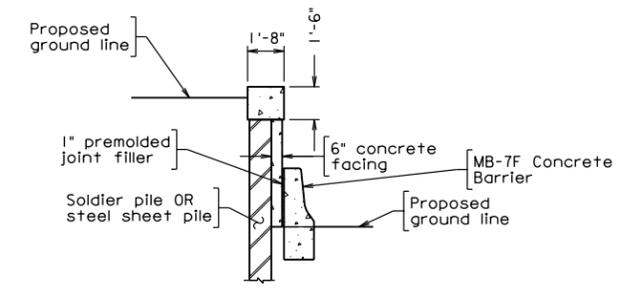
**COMBINATION RETAINING WALL/NOISE BARRIER  
TYPICAL SECTION  
W-2**



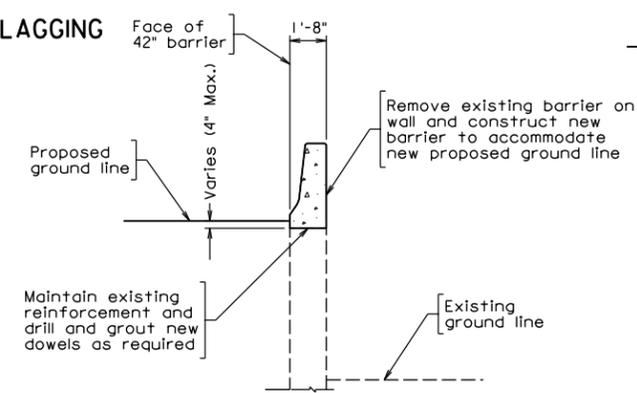
**COMBINATION BARRIER/NOISE BARRIER  
TYPICAL SECTION  
W-3**  
Scale: 1/4" = 1'-0"



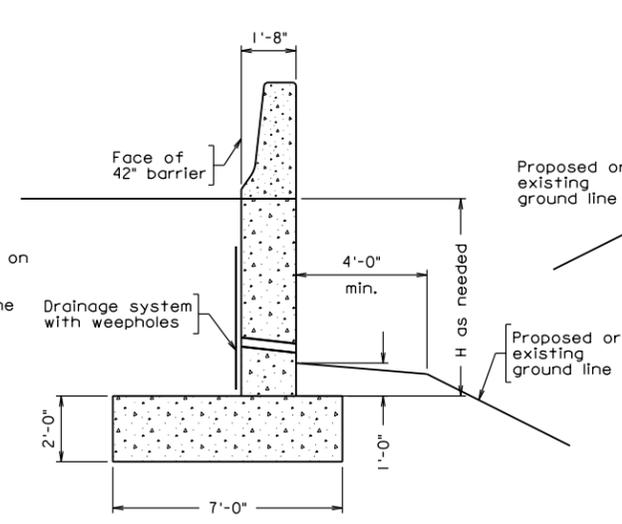
**MODIFIED BARRIER RETAINING WALL  
TYPICAL SECTION  
W-4**  
Scale: 1/4" = 1'-0"



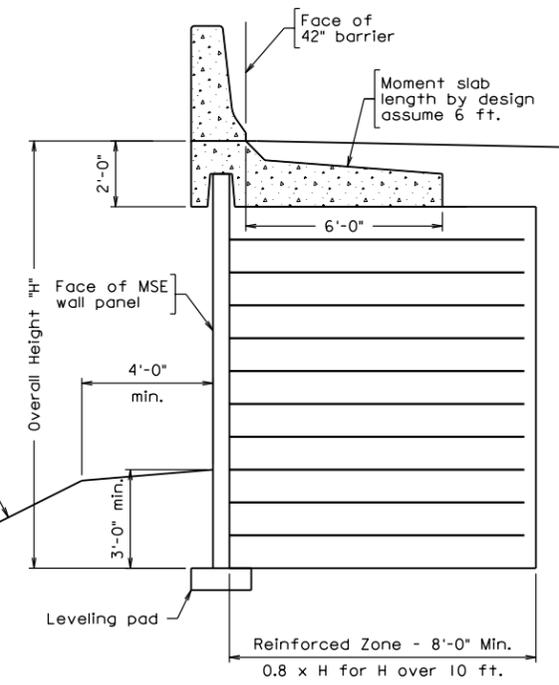
**SHEET PILE OR SOLDIER PILE AND LAGGING  
WITH CONCRETE FACING  
TYPICAL SECTION  
W-10**  
Scale: 1/4" = 1'-0"



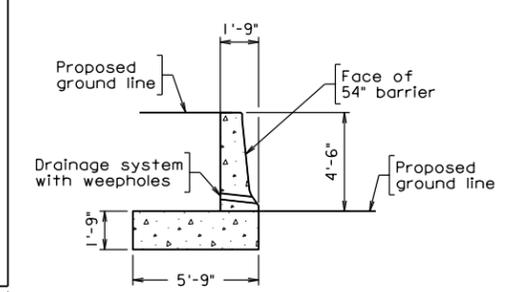
**NEW BARRIER ON EXISTING RETAINING WALL  
TYPICAL SECTION  
W-9**  
Scale: 1/4" = 1'-0"



**SPECIAL DESIGN RETAINING WALL  
(H: 2'-0" TO 6'-0")  
TYPICAL SECTION  
W-7**



**MSE WALL  
TYPICAL SECTION  
W-8**



**54" MODIFIED TALL WALL  
TYPICAL SECTION  
W-5**  
Scale: 1/4" = 1'-0"

WHITMAN REQUARDT & ASSOCIATES  
RICHMOND, VA  
STRUCTURAL ENGINEER



**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION

Scale: 3/8" = 1'-0", unless otherwise shown © 2022, Commonwealth of Virginia

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
<b>RETAINING WALL SECTIONS</b>			
No.	Description	Date	Designed: WRA Drawn: WRA Checked: WRA
	Revisions		Date: Aug. 2022
		Plan No.	Sheet No. B-13

I-64 HREL TECHNICAL PROPOSAL VOLUME II  
PROJECT SCHEDULE



Submitted by:



+



Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025														
					S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N
<b>VDOT I-64 Hampton Roads Express Lanes (HREL) Segment 1A Design-Build</b>					640	19-Nov-22	15-Dec-25																																				
MS000001030	Notice to Proceed (19-Nov-2022)	0	19-Nov-22*		◆ Notice to Proceed (19-Nov-2022)																																						
PNN000000010	Prepare Property Owner Notification Letters	5	21-Nov-22	29-Nov-22	■ Prepare Property Owner Notification Letters																																						
PNN000000020	SFA Property Owner Notification Letters	2	30-Nov-22	01-Dec-22	SFA Property Owner Notification Letters																																						
PNN000000030	VDOT R/A Property Owner Notification Letters	21	02-Dec-22	22-Dec-22	■ VDOT R/A Property Owner Notification Letters																																						
PNN000000040	Distribute Property Owner Notification Letters	3	23-Dec-22	04-Jan-23	■ Distribute Property Owner Notification Letters																																						
PNN000000050	Property Owner Notification Period	15	05-Jan-23	19-Jan-23	■ Property Owner Notification Period																																						
DSS000001010	Perform Supplemental Topographic Surveys	30	20-Jan-23	02-Mar-23	■ Perform Supplemental Topographic Surveys																																						
DSS000001040	Compile Topographic Survey Basemap	5	03-Mar-23	09-Mar-23	■ Compile Topographic Survey Basemap																																						
DSS000001050	Develop Topographic Survey Basemap	5	10-Mar-23	16-Mar-23	■ Develop Topographic Survey Basemap																																						
DSAE00001060	VDOT R/C FI/RW Plans / SWM Report	21	17-Mar-23	06-Apr-23	■ VDOT R/C FI/RW Plans / SWM Report																																						
DSAC00001000	Advance Design to Phase 1 - ITS & Sign Structure Plans	30	07-Apr-23	18-May-23	■ Advance Design to Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001010	Compile Phase 1 - ITS & Sign Structure Plans	5	19-May-23	25-May-23	■ Compile Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001020	SFC (AM Review) Phase 1 - ITS & Sign Structure Plans	3	26-May-23	31-May-23	■ SFC (AM Review) Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001030	R/C (AM Team) Phase 1 - ITS & Sign Structure Plans	5	01-Jun-23	07-Jun-23	■ R/C (AM Team) Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001040	A/C Phase 1 - ITS & Sign Structure Plans	5	08-Jun-23	14-Jun-23	■ A/C Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001050	SFC (VDOT) Phase 1 - ITS & Sign Structure Plans	3	15-Jun-23	19-Jun-23	■ SFC (VDOT) Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001060	R/C (VDOT) Phase 1 - ITS & Sign Structure Plans	21	20-Jun-23	10-Jul-23	■ R/C (VDOT) Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001070	AC Develop AFC Phase 1 - ITS & Sign Structure Plans	5	11-Jul-23	17-Jul-23	■ AC Develop AFC Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001080	SFA (VDOT) AFC Phase 1 - ITS & Sign Structure Plans/Comment Resolution Matrix	3	18-Jul-23	20-Jul-23	SFA (VDOT) AFC Phase 1 - ITS & Sign Structure Plans/Comment Resolution Matrix																																						
DSAC00001090	VDOT R/AAFC Phase 1 - ITS & Sign Structure Plans	21	21-Jul-23	10-Aug-23	■ VDOT R/AAFC Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001100	VDOT Approves - AFC Phase 1 - ITS & Sign Structure Plans	3	11-Aug-23	15-Aug-23	■ VDOT Approves - AFC Phase 1 - ITS & Sign Structure Plans																																						
DSAC00001110	VDOT Issues Limited Notice to Commence Construction - AFC Phase 1 - ITS & Sign Structure Plans	3	16-Aug-23	18-Aug-23	VDOT Issues Limited Notice to Commence Construction - AFC Phase 1 - ITS & Sign Structure Plans																																						
MS0000001080	VDOT Issues - Limited Notice to Commence Construction - Phase 1 ITS & Sign Structure Plans	0	19-Aug-23		◆ VDOT Issues - Limited Notice to Commence Construction - Phase 1 ITS & Sign Structure Plans																																						
PCVP00001040	Procure Signing / Markings Package Vendor	0	21-Aug-23	21-Aug-23	Procure Signing / Markings Package Vendor																																						
PCCS00006000	Prepare Signage Shop Drawings	20	21-Aug-23	18-Sep-23	■ Prepare Signage Shop Drawings																																						
PCCS00006010	SFA Signage Shop Drawings	1	19-Sep-23	19-Sep-23	SFA Signage Shop Drawings																																						
PCCS00006020	VDOT R/A Signage Shop Drawings	21	20-Sep-23	10-Oct-23	■ VDOT R/A Signage Shop Drawings																																						
PCFB00006000	Fab & Deliver - Signs	90	11-Oct-23	08-Jan-24	■ Fab & Deliver - Signs																																						
CN1H1R001150	Erect Permanent Signs - Sta. 6002+50 to 6059+10 - I-64 WB HOV - Phase 1	3	09-Jan-24	15-Jan-24	■ Erect Permanent Signs - Sta. 6002+50 to 6059+10 - I-64 WB HOV - Phase 1																																						
CN1H1R001170	Seed & Mulch - Sta. 6002+50 to 6059+10 - I-64 WB HOV - Phase 1	1	16-Jan-24	16-Jan-24	Seed & Mulch - Sta. 6002+50 to 6059+10 - I-64 WB HOV - Phase 1																																						
CN1H1T002000	Move Traffic to WB HOV Lanes - I-64 HOV - Section 1 - Phase 1	3	17-Jan-24	22-Jan-24	■ Move Traffic to WB HOV Lanes - I-64 HOV - Section 1 - Phase 1																																						
CN1H1R003000	Sawcut - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	3	23-Jan-24	29-Jan-24	■ Sawcut - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R003010	Remove Existing Pavement - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	4	30-Jan-24	05-Feb-24	■ Remove Existing Pavement - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R003020	Strip Topsoil - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	1	06-Feb-24	06-Feb-24	Strip Topsoil - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R003030	Cut/Fill - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	3	07-Feb-24	12-Feb-24	■ Cut/Fill - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R003040	Install Drainage - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	29	13-Feb-24	01-Apr-24	■ Install Drainage - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R003100	Construct Median Barrier - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	58	29-Feb-24	03-Jun-24	■ Construct Median Barrier - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R003110	Place Base Asphalt - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	2	04-Jun-24	05-Jun-24	Place Base Asphalt - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R003120	Place Asphalt SMA-19.0 - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	3	06-Jun-24	11-Jun-24	■ Place Asphalt SMA-19.0 - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R004000	Mill - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	2	12-Jun-24	13-Jun-24	Mill - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R004010	Place Final Course Surface Asphalt - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	2	14-Jun-24	17-Jun-24	■ Place Final Course Surface Asphalt - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
CN1H1R004020	Apply Permanent Pavement Markings - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1	2	18-Jun-24	19-Jun-24	Apply Permanent Pavement Markings - Sta. 6002+50 to 6059+10 - I-64 Reversible HOV - Phase 1																																						
MS0000005050	Complete HOV Lanes	0	19-Jun-24		◆ Complete HOV Lanes																																						



Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025														
					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
<b>VDOT I-64 Hampton Roads Express Lanes (HREL) Segment 1A Design-Build</b>					670	23-Sep-22	15-Dec-25																																				
<b>Milestones</b>					670	23-Sep-22	15-Dec-25																																				
MS0000001000	Notice of Intent to Award (23-Sept-2022)	0	23-Sep-22		◆ Notice of Intent to Award (23-Sept-2022)																																						
MS0000001010	CTB Approval / Notice to Award (26-Oct-2022)	0	26-Oct-22*		◆ CTB Approval / Notice to Award (26-Oct-2022)																																						
MS0000001020	Design-Build Contract Execution (18-Nov-2022)	0	18-Nov-22*		◆ Design-Build Contract Execution (18-Nov-2022)																																						
MS0000001030	Notice to Proceed (19-Nov-2022)	0	19-Nov-22*		◆ Notice to Proceed (19-Nov-2022)																																						
MS0000001040	Scope Validation Period	120	19-Nov-22	18-Mar-23	■ Scope Validation Period																																						
MS0000001050	Begin Construction Management / Planning	90	12-Apr-23	10-Jul-23	■ Begin Construction Management / Planning																																						
MS0000001080	VDOT Issues - Limited Notice to Commence Construction - Phase 1 ITS & Sign Structure Plans	0	19-Aug-23		◆ VDOT Issues - Limited Notice to Commence Construction - Phase 1 ITS & Sign																																						
MS0000001060	VDOT Issues - Limited Notice to Commence Construction - Phase 1 TMP/ MOT Plans	0	26-Aug-23		◆ VDOT Issues - Limited Notice to Commence Construction - Phase 1 TMP/ M																																						
MS0000001070	VDOT Issues - Limited Notice to Commence Construction - Phase 1 C&G / ESC Plans	0	13-Oct-23		◆ VDOT Issues - Limited Notice to Commence Construction - Phase 1 C&C																																						
MS0000001090	VDOT Issues - Notice to Commence Construction - Roadway	0	14-Nov-23		◆ VDOT Issues - Notice to Commence Construction - Roadway																																						
MS0000005050	Complete HOV Lanes	0		19-Jun-24	◆ Complete HOV Lanes																																						
MS0000005010	Complete EB Lanes - Phase 1	0		18-Feb-25	◆ Complete EB Lanes - Phase																																						
MS0000009000	Perform ITS Level A Final Testing	25	17-Apr-25	11-May-25	■ Perform ITS Level A																																						
MS0000009010	Perform ITS Level B Final Testing	35	12-May-25	15-Jun-25	■ Perform ITS Lev																																						
MS0000005030	Complete WB Lanes - Phase 1	0		23-May-25	◆ Complete WB Lan																																						
MS0000009020	180-day TSI Window	180	16-Jun-25	12-Dec-25	■																																						
MS0000005020	Complete EB Lanes - Phase 2	0		21-Oct-25	◆ Com																																						
MS0099999910	VDOT/AM Complete Project Closeout	35	11-Nov-25	15-Dec-25	■																																						
MS0000005040	Complete WB Lanes - Phase 2	0		08-Dec-25	◆																																						
MS0099999920	Final Completion - VDOT Issues C-5	0		15-Dec-25	◆																																						
MS0099999930	Project Closeout Complete	0		15-Dec-25	◆																																						
<b>Project Administration</b>					640	19-Nov-22	15-Dec-25																																				
<b>Project Startup</b>					25	21-Aug-23	25-Sep-23																																				
PAS000001000	Setup VDOT Field Office	20	21-Aug-23	18-Sep-23	■ Setup VDOT Field Office																																						
PAS000001010	Setup Myers Field Office	20	28-Aug-23	25-Sep-23	■ Setup Myers Field Office																																						
PAS000001020	Install Project Wide Advance Work Zone Signage - Phase 1 MOT	10	28-Aug-23	11-Sep-23	■ Install Project Wide Advance Work Zone Signage - Phase 1 MOT																																						
PAS000001030	Mobilize for Construction	20	28-Aug-23	25-Sep-23	■ Mobilize for Construction																																						
<b>Management Submittals</b>					187	21-Nov-22	09-Oct-23																																				
PAM000002000	Prepare Right-of-Way (RW) Acquisition Plan	20	21-Nov-22	20-Dec-22	■ Prepare Right-of-Way (RW) Acquisition Plan																																						
PAM000002010	SFC Right-of-Way (RW) Acquisition Plan	3	21-Dec-22	23-Dec-22	■ SFC Right-of-Way (RW) Acquisition Plan																																						
PAM000002020	R/C Right-of-Way (RW) Acquisition Plan	21	24-Dec-22	13-Jan-23	■ R/C Right-of-Way (RW) Acquisition Plan																																						
PAM000002030	AC Right-of-Way (RW) Acquisition Plan	5	16-Jan-23	20-Jan-23	■ AC Right-of-Way (RW) Acquisition Plan																																						
PAM000002040	SFA Right-of-Way (RW) Acquisition Plan	3	23-Jan-23	25-Jan-23	■ SFA Right-of-Way (RW) Acquisition Plan																																						
PAM000002050	VDOT R/A Right-of-Way (RW) Acquisition Plan	21	26-Jan-23	15-Feb-23	■ VDOT R/A Right-of-Way (RW) Acquisition Plan																																						
PAM000002060	VDOT Approves Right-of-Way (RW) Acquisition Plan	5	16-Feb-23	22-Feb-23	■ VDOT Approves Right-of-Way (RW) Acquisition Plan																																						
PAM000001000	Prepare Site Specific Safety & Hazardous Materials Management Plan	20	12-Apr-23	09-May-23	■ Prepare Site Specific Safety & Hazardous Materials Management Plan																																						
PAM000001010	SFC Site Specific Safety & Hazardous Materials Management Plan	3	10-May-23	12-May-23	■ SFC Site Specific Safety & Hazardous Materials Management Plan																																						
PAM000001020	R/C Site Specific Safety & Hazardous Materials Management Plan	21	13-May-23	02-Jun-23	■ R/C Site Specific Safety & Hazardous Materials Management Plan																																						
PAM000001030	AC Site Specific Safety & Hazardous Materials Management Plan	5	05-Jun-23	09-Jun-23	■ AC Site Specific Safety & Hazardous Materials Management Plan																																						
PAM000001040	SFA Site Specific Safety & Hazardous Materials Management Plan	3	12-Jun-23	14-Jun-23	■ SFA Site Specific Safety & Hazardous Materials Management Plan																																						
PAM000001050	VDOT R/A Site Specific Safety & Hazardous Materials Management Plan	21	15-Jun-23	05-Jul-23	■ VDOT R/A Site Specific Safety & Hazardous Materials Management Plan																																						





Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025														
					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
<b>General Design Efforts</b>					7	21-Nov-22	01-Dec-22	▼ 01-Dec-22, General Design Efforts																																			
DSD000001000	Assess Existing Conditions Data - Identify Supplementary Data Needs	1	21-Nov-22	21-Nov-22	Assess Existing Conditions Data - Identify Supplementary Data Needs																																						
DSD000001010	Review Final Contract Documents	1	22-Nov-22	22-Nov-22	Review Final Contract Documents																																						
DSD000001020	Schedule / Perform Site Visits / Assessments	5	23-Nov-22	01-Dec-22	█ Schedule / Perform Site Visits / Assessments																																						
<b>Design Survey</b>					69	02-Dec-22	16-Mar-23	▼ 16-Mar-23, Design Survey																																			
DSS000001000	Conduct General Reviews - Topographic Site Conditions	2	02-Dec-22	05-Dec-22	█ Conduct General Reviews - Topographic Site Conditions																																						
DSS000002000	Conduct General Field Review - Roadways	5	02-Dec-22	08-Dec-22	█ Conduct General Field Review - Roadways																																						
DSS000003000	Perform Existing Sign Surveys	5	02-Dec-22	08-Dec-22	█ Perform Existing Sign Surveys																																						
DSS000002010	Document Existing Pavement Conditions	5	09-Dec-22	15-Dec-22	█ Document Existing Pavement Conditions																																						
DSS000003010	Prepare Existing Sign Inventory Report	10	09-Dec-22	22-Dec-22	█ Prepare Existing Sign Inventory Report																																						
DSS000002020	SFI Existing Pavement Conditions Findings	1	16-Dec-22	16-Dec-22	SFI Existing Pavement Conditions Findings																																						
DSS000003020	SFI Existing Sign Inventory Findings	1	23-Dec-22	23-Dec-22	SFI Existing Sign Inventory Findings																																						
DSS000001010	Perform Supplemental Topographic Surveys	30	20-Jan-23	02-Mar-23	█ Perform Supplemental Topographic Surveys																																						
DSS000001040	Compile Topographic Survey Basemap	5	03-Mar-23	09-Mar-23	█ Compile Topographic Survey Basemap																																						
DSS000001050	Develop Topographic Survey Basemap	5	10-Mar-23	16-Mar-23	█ Develop Topographic Survey Basemap																																						
<b>Geotechnical</b>					163	21-Nov-22	29-Aug-23	▼ 29-Aug-23, Geotechnical																																			
<b>Geotechnical Borings - Bridges</b>					18	21-Nov-22	21-Dec-22	▼ 21-Dec-22, Geotechnical Borings - Bridges																																			
DSGBR0001000	Compile Geotechnical Information Basemap - Bridge Borings	2	21-Nov-22	22-Nov-22	Compile Geotechnical Information Basemap - Bridge Borings																																						
DSGBR0001010	Prepare Geotechnical Investigation Plan - Bridge Borings	2	23-Nov-22	28-Nov-22	█ Prepare Geotechnical Investigation Plan - Bridge Borings																																						
DSGBR0001015	Compile Geotechnical Investigation Campaign Plan - Bridge Borings	2	29-Nov-22	30-Nov-22	Compile Geotechnical Investigation Campaign Plan - Bridge Borings																																						
DSGBR0001020	SFI (VDOT) Geotechnical Investigation Campaign Plan - Bridge Borings	21	01-Dec-22	21-Dec-22	█ SFI (VDOT) Geotechnical Investigation Campaign Plan - Bridge Borings																																						
<b>Supplemental Borings - Bridges</b>					55	22-Dec-22	16-Mar-23	▼ 16-Mar-23, Supplemental Borings - Bridges																																			
DSGBB0001000	Locate/Conduct Geotechnical Borings - Bridge Borings	20	22-Dec-22	26-Jan-23	█ Locate/Conduct Geotechnical Borings - Bridge Borings																																						
DSGBB0001010	Compile Boring Logs - Bridge Borings	10	27-Jan-23	09-Feb-23	█ Compile Boring Logs - Bridge Borings																																						
DSGBB0001020	Conduct Boring Laboratory Analysis - Bridge Borings	20	10-Feb-23	09-Mar-23	█ Conduct Boring Laboratory Analysis - Bridge Borings																																						
DSGBB0001030	Compile Boring Laboratory Analysis - Bridge Borings	5	10-Mar-23	16-Mar-23	█ Compile Boring Laboratory Analysis - Bridge Borings																																						
<b>Reports and Recommendations - Bridges</b>					86	17-Mar-23	02-Aug-23	▼ 02-Aug-23, Reports and Recommendations - Bridges																																			
DSGRB0001030	Conduct Geotechnical Analyses and Design - Bridges	20	17-Mar-23	13-Apr-23	█ Conduct Geotechnical Analyses and Design - Bridges																																						
DSGRB0001000	Compile Geotechnical Data Report (GDR) - Bridges	10	17-Mar-23	30-Mar-23	█ Compile Geotechnical Data Report (GDR) - Bridges																																						
DSGRB0001010	Submit Geotechnical Data Report (GDR) - Bridges	3	31-Mar-23	04-Apr-23	█ Submit Geotechnical Data Report (GDR) - Bridges																																						
DSGRB0001020	R/A (VDOT) Geotechnical Data Report (GDR) - Bridges	21	05-Apr-23	25-Apr-23	█ R/A (VDOT) Geotechnical Data Report (GDR) - Bridges																																						
DSGRB0001040	Prepare Preliminary Geotechnical Engineering Recommendations - Bridges	10	14-Apr-23	27-Apr-23	█ Prepare Preliminary Geotechnical Engineering Recommendations - Bridges																																						
DSGRB0001050	Compile Geotechnical Engineering Report (GER) - Bridges	10	28-Apr-23	11-May-23	█ Compile Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001060	SFC (AM Review) Geotechnical Engineering Report (GER) - Bridges	3	12-May-23	16-May-23	█ SFC (AM Review) Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001070	AM R/C Geotechnical Engineering Report (GER) - Bridges	5	17-May-23	23-May-23	█ AM R/C Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001080	A/C Geotechnical Engineering Report (GER) - Bridges	5	24-May-23	31-May-23	█ A/C Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001090	SFC (VDOT) Geotechnical Engineering Report (GER) - Bridges	3	01-Jun-23	05-Jun-23	█ SFC (VDOT) Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001100	VDOT R/C Geotechnical Engineering Report (GER) - Bridges	21	06-Jun-23	26-Jun-23	█ VDOT R/C Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001110	A/C Advance to Final Geotechnical Engineering Report (GER) - Bridges	5	27-Jun-23	03-Jul-23	█ A/C Advance to Final Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001120	SFA (VDOT) Final Geotechnical Engineering Report (GER) - Bridges	3	05-Jul-23	07-Jul-23	█ SFA (VDOT) Final Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001130	VDOT R/A Final Geotechnical Engineering Report (GER) - Bridges	21	08-Jul-23	28-Jul-23	█ VDOT R/A Final Geotechnical Engineering Report (GER) - Bridges																																						
DSGRB0001140	VDOT Approves Final Geotechnical Engineering Report (GER) - Bridges	3	31-Jul-23	02-Aug-23	VDOT Approves Final Geotechnical Engineering Report (GER) - Bridges																																						
<b>Geotechnical Borings - Roadway</b>					18	21-Nov-22	16-Dec-22	▼ 16-Dec-22, Geotechnical Borings - Roadway																																			
DSGSS0001000	Compile Geotechnical Information Basemap	5	21-Nov-22	29-Nov-22	█ Compile Geotechnical Information Basemap																																						













Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025											
					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
<b>Final Design Noise Analysis Report</b>		239	21-Nov-22	23-Jan-24	23-Jan-24, Final Design Noise Analysis Report																																			
<b>Sound Barriers</b>		239	21-Nov-22	23-Jan-24	23-Jan-24, Sound Barriers																																			
DSN000100010	Perform Noise Analysis/Develop Initial Findings Report	40	21-Nov-22	25-Jan-23	Perform Noise Analysis/Develop Initial Findings Report																																			
DSN000100020	Design Acoustic Profiles / Perform Constructability Assessment	20	13-Mar-23	07-Apr-23	Design Acoustic Profiles / Perform Constructability Assessment																																			
DSN000100025	Prepare Final Design Noise Analysis Report (FDNAR)	20	10-Apr-23	05-May-23	Prepare Final Design Noise Analysis Report (FDNAR)																																			
DSN000100030	SFC (DB) - FDNAR	3	08-May-23	10-May-23	SFC (DB) - FDNAR																																			
DSN000100035	R/C (DB) - FDNAR	10	11-May-23	24-May-23	R/C (DB) - FDNAR																																			
DSN000100040	AC - FDNAR	10	25-May-23	08-Jun-23	AC - FDNAR																																			
DSN000100042	SFC (VDOT) - FDNAR	3	09-Jun-23	13-Jun-23	SFC (VDOT) - FDNAR																																			
DSN000100045	R/C (VDOT) - FDNAR	21	14-Jun-23	04-Jul-23	R/C (VDOT) - FDNAR																																			
DSN000100048	AC - Advance to Final FDNAR	20	05-Jul-23	01-Aug-23	AC - Advance to Final FDNAR																																			
DSN000100050	SFA - Final FDNAR	3	02-Aug-23	04-Aug-23	SFA - Final FDNAR																																			
DSN000100060	R/A - Final FDNAR	21	05-Aug-23	25-Aug-23	R/A - Final FDNAR																																			
DSN000100065	VDOT Approves Final FDNAR	5	28-Aug-23	01-Sep-23	VDOT Approves Final FDNAR																																			
DSN000100070	VDOT Provide Concurrence Letter to Chief Engineer & FHWA	21	02-Sep-23	22-Sep-23	VDOT Provide Concurrence Letter to Chief Engineer & FHWA																																			
DSN000100080	Prepare and Mail Letters to Benefitted Receptors	5	25-Sep-23	29-Sep-23	Prepare and Mail Letters to Benefitted Receptors																																			
DSN000100090	Public Outreach with Benefitted Receptors (DB)	15	02-Oct-23	20-Oct-23	Public Outreach with Benefitted Receptors (DB)																																			
DSN000100100	Prepare Memorandum Summarizing Outreach to Benefitted Receptors	10	23-Oct-23	03-Nov-23	Prepare Memorandum Summarizing Outreach to Benefitted Receptors																																			
DSN000100110	SFA (VDOT) Memorandum Summarizing Outreach to Benefitted Receptors	3	06-Nov-23	08-Nov-23	SFA (VDOT) Memorandum Summarizing Outreach to Benefitted Receptors																																			
DSN000100120	R/A (VDOT) Memorandum Summarizing Outreach to Benefitted Receptors	21	09-Nov-23	29-Nov-23	R/A (VDOT) Memorandum Summarizing Outreach to Benefitted Receptors																																			
DSN000100130	VDOT Approves Memorandum Summarizing Outreach to Benefitted Receptors	5	30-Nov-23	06-Dec-23	VDOT Approves Memorandum Summarizing Outreach to Benefitted Receptors																																			
DSN000100140	Update Final FDNAR with Memorandum Findings	10	07-Dec-23	20-Dec-23	Update Final FDNAR with Memorandum Findings																																			
DSN000100145	SFA (VDOT) Updated Final FDNAR	3	21-Dec-23	02-Jan-24	SFA (VDOT) Updated Final FDNAR																																			
DSN000100150	VDOT Provides Concurrence Letter for Updated Final FDNAR	21	03-Jan-24	23-Jan-24	VDOT Provides Concurrence Letter for Updated Final FDNAR																																			
<b>Permitting / Environmental</b>		300	21-Nov-22	07-May-24	07-May-24, Permitting / Environmental																																			
<b>VPDES</b>		48	07-Apr-23	14-Jun-23	14-Jun-23, VPDES																																			
ENV000001000	Compile / Complete VPDES Construction Permit Registration Forms (LD-445's)	10	07-Apr-23	20-Apr-23	Compile / Complete VPDES Construction Permit Registration Forms (LD-445's)																																			
ENV000001010	SFA - VPDES Construction Permit (VDOT Review)	5	21-Apr-23	27-Apr-23	SFA - VPDES Construction Permit (VDOT Review)																																			
ENV000001020	VDOT R/A - VPDES Construction Permit (HOLD POINT)	3	28-Apr-23	02-May-23	VDOT R/A - VPDES Construction Permit (HOLD POINT)																																			
ENV000001030	VDOT Secures - VPDES Construction Permit	30	03-May-23	14-Jun-23	VDOT Secures - VPDES Construction Permit																																			
<b>Waters of the US Permit</b>		145	21-Nov-22	01-Aug-23	01-Aug-23, Waters of the US Permit																																			
ENP000001040	Develop Permit Impact Plates	15	21-Nov-22	13-Dec-22	Develop Permit Impact Plates																																			
ENP000001050	Prepare Avoidance and Minimization Studies	15	14-Dec-22	11-Jan-23	Prepare Avoidance and Minimization Studies																																			
ENP000001060	Assemble Waters of the US Permit Application	15	12-Jan-23	01-Feb-23	Assemble Waters of the US Permit Application																																			
ENP000001070	SFR (DB) Waters of the US Permit Application	5	02-Feb-23	08-Feb-23	SFR (DB) Waters of the US Permit Application																																			
ENP000001080	A/C Waters of the US Permit Application	10	09-Feb-23	22-Feb-23	A/C Waters of the US Permit Application																																			
ENP000001090	SFA (Agencies) Waters of the US Permit Application	5	23-Feb-23	01-Mar-23	SFA (Agencies) Waters of the US Permit Application																																			
ENP000001100	R/A (Agencies) Waters of the US Permit Application	15	02-Mar-23	22-Mar-23	R/A (Agencies) Waters of the US Permit Application																																			
ENP000001110	Agencies Accept Waters of the US Permit Application	5	23-Mar-23	29-Mar-23	Agencies Accept Waters of the US Permit Application																																			
ENP000001120	Initiate Public Notice Period (Agencies)	30	30-Mar-23	10-May-23	Initiate Public Notice Period (Agencies)																																			
ENP000001130	Agencies Hold Public Hearing, if Required	15	11-May-23	01-Jun-23	Agencies Hold Public Hearing, if Required																																			
ENP000001140	Review Public Comments / Draft Permit	5	02-Jun-23	08-Jun-23	Review Public Comments / Draft Permit																																			
ENP000001150	Secure Mitigation Requirements	10	09-Jun-23	22-Jun-23	Secure Mitigation Requirements																																			
ENP000001155	Agencies Process Waters of the US Permit Application	30	23-Jun-23	22-Jul-23	Agencies Process Waters of the US Permit Application																																			





Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025											
					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
<b>City of Norfolk Fiber</b>					17-Sep-23, City of Norfolk Fiber																																			
CTFN00001000	Prepare Utility Relocation Concept Plan - City of Norfolk Fiber	75	08-Jun-23	21-Aug-23	[Green bar] Prepare Utility Relocation Concept Plan - City of Norfolk Fiber																																			
CTFN00001010	SFC Utility Relocation Concept Plan - City of Norfolk Fiber	3	22-Aug-23	24-Aug-23	[Green bar] SFC Utility Relocation Concept Plan - City of Norfolk Fiber																																			
CTFN00001020	R/C Utility Relocation Concept Plan (DB and VDOT) - City of Norfolk Fiber	21	25-Aug-23	14-Sep-23	[Green bar] R/C Utility Relocation Concept Plan (DB and VDOT) - City of Norfolk Fiber																																			
CTFN00001030	Update VDOT RUMS with Utility Status Report Data - City of Norfolk Fiber	3	15-Sep-23	17-Sep-23	[Green bar] Update VDOT RUMS with Utility Status Report Data - City of Norfolk Fiber																																			
<b>Qwest</b>					17-Sep-23, Qwest																																			
CTFQ00001000	Prepare Utility Relocation Concept Plan - Qwest	75	08-Jun-23	21-Aug-23	[Green bar] Prepare Utility Relocation Concept Plan - Qwest																																			
CTFQ00001010	SFC Utility Relocation Concept Plan - Qwest	3	22-Aug-23	24-Aug-23	[Green bar] SFC Utility Relocation Concept Plan - Qwest																																			
CTFQ00001020	R/C Utility Relocation Concept Plan (DB and VDOT) - Qwest	21	25-Aug-23	14-Sep-23	[Green bar] R/C Utility Relocation Concept Plan (DB and VDOT) - Qwest																																			
CTFQ00001030	Update VDOT RUMS with Utility Status Report Data - Qwest	3	15-Sep-23	17-Sep-23	[Green bar] Update VDOT RUMS with Utility Status Report Data - Qwest																																			
<b>City of Norfolk Department of Utilities</b>					17-Sep-23, City of Norfolk Department of Utilities																																			
UTFU00001000	Prepare Utility Relocation Concept Plan - City of Norfolk Department of Utilities	75	08-Jun-23	21-Aug-23	[Green bar] Prepare Utility Relocation Concept Plan - City of Norfolk Department of Utilities																																			
UTFU00001010	SFC Utility Relocation Concept Plan - City of Norfolk Department of Utilities	3	22-Aug-23	24-Aug-23	[Green bar] SFC Utility Relocation Concept Plan - City of Norfolk Department of Utilities																																			
UTFU00001020	R/C Utility Relocation Concept Plan (DB and VDOT) - City of Norfolk Department of Utilities	21	25-Aug-23	14-Sep-23	[Green bar] R/C Utility Relocation Concept Plan (DB and VDOT) - City of Norfolk Department of Utilities																																			
UTFU00001030	Update VDOT RUMS with Utility Status Report Data - City of Norfolk Department of Utilities	3	15-Sep-23	17-Sep-23	[Green bar] Update VDOT RUMS with Utility Status Report Data - City of Norfolk Department of Utilities																																			
<b>Verizon</b>					17-Sep-23, Verizon																																			
UTFV00001000	Prepare Utility Relocation Concept Plan - Verizon	75	08-Jun-23	21-Aug-23	[Green bar] Prepare Utility Relocation Concept Plan - Verizon																																			
UTFV00001010	SFC Utility Relocation Concept Plan - Verizon	3	22-Aug-23	24-Aug-23	[Green bar] SFC Utility Relocation Concept Plan - Verizon																																			
UTFV00001020	R/C Utility Relocation Concept Plan (DB and VDOT) - Verizon	21	25-Aug-23	14-Sep-23	[Green bar] R/C Utility Relocation Concept Plan (DB and VDOT) - Verizon																																			
UTFV00001030	Update VDOT RUMS with Utility Status Report Data - Verizon	3	15-Sep-23	17-Sep-23	[Green bar] Update VDOT RUMS with Utility Status Report Data - Verizon																																			
<b>Utility Plans &amp; Estimates</b>					23-Nov-23, Utility Plans & Estimates																																			
<b>Crown Castle</b>					23-Nov-23, Crown Castle																																			
UTPC00001000	Advance to Final Relocation Plan / Complete UT-9's - Crown Castle	20	03-Oct-23	22-Oct-23	[Green bar] Advance to Final Relocation Plan / Complete UT-9's - Crown Castle																																			
UTPC00001010	SFA Final Utility Relocation Plan / UT-9's - Crown Castle	3	23-Oct-23	25-Oct-23	[Green bar] SFA Final Utility Relocation Plan / UT-9's - Crown Castle																																			
UTPC00001020	VDOT R/A Final Utility Relocation Plan - Crown Castle	21	26-Oct-23	15-Nov-23	[Green bar] VDOT R/A Final Utility Relocation Plan - Crown Castle																																			
UTPC00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Crown Castle	5	16-Nov-23	20-Nov-23	[Green bar] VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Crown Castle																																			
UTPC00001040	Update VDOT RUMS with Utility Status Report Data - Crown Castle	3	21-Nov-23	23-Nov-23	[Green bar] Update VDOT RUMS with Utility Status Report Data - Crown Castle																																			
<b>Dominion Energy</b>					24-Oct-23, Dominion Energy																																			
UTPD00001000	Advance to Final Relocation Plan / Complete UT-9's - Dominion Energy	30	24-Aug-23	22-Sep-23	[Green bar] Advance to Final Relocation Plan / Complete UT-9's - Dominion Energy																																			
UTPD00001010	SFA Final Utility Relocation Plan / UT-9's - Dominion Energy	3	23-Sep-23	25-Sep-23	[Green bar] SFA Final Utility Relocation Plan / UT-9's - Dominion Energy																																			
UTPD00001020	VDOT R/A Final Utility Relocation Plan - Dominion Energy	21	26-Sep-23	16-Oct-23	[Green bar] VDOT R/A Final Utility Relocation Plan - Dominion Energy																																			
UTPD00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Dominion Energy	5	17-Oct-23	21-Oct-23	[Green bar] VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Dominion Energy																																			
UTPD00001040	Update VDOT RUMS with Utility Status Report Data - Dominion Energy	3	22-Oct-23	24-Oct-23	[Green bar] Update VDOT RUMS with Utility Status Report Data - Dominion Energy																																			
<b>Virginia Natural Gas</b>					24-Oct-23, Virginia Natural Gas																																			
UTPG00001000	Advance to Final Relocation Plan / Complete UT-9's - Virginia Natural Gas	30	24-Aug-23	22-Sep-23	[Green bar] Advance to Final Relocation Plan / Complete UT-9's - Virginia Natural Gas																																			
UTPG00001010	SFA Final Utility Relocation Plan / UT-9's - Virginia Natural Gas	3	23-Sep-23	25-Sep-23	[Green bar] SFA Final Utility Relocation Plan / UT-9's - Virginia Natural Gas																																			
UTPG00001020	VDOT R/A Final Utility Relocation Plan - Virginia Natural Gas	21	26-Sep-23	16-Oct-23	[Green bar] VDOT R/A Final Utility Relocation Plan - Virginia Natural Gas																																			
UTPG00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Virginia Natural Gas	5	17-Oct-23	21-Oct-23	[Green bar] VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Virginia Natural Gas																																			
UTPG00001040	Update VDOT RUMS with Utility Status Report Data - Virginia Natural Gas	3	22-Oct-23	24-Oct-23	[Green bar] Update VDOT RUMS with Utility Status Report Data - Virginia Natural Gas																																			
<b>Lumos</b>					18-Nov-23, Lumos																																			
UTPL00001000	Advance to Final Relocation Plan / Complete UT-9's - Lumos	30	18-Sep-23	17-Oct-23	[Green bar] Advance to Final Relocation Plan / Complete UT-9's - Lumos																																			
UTPL00001010	SFA Final Utility Relocation Plan / UT-9's - Lumos	3	18-Oct-23	20-Oct-23	[Green bar] SFA Final Utility Relocation Plan / UT-9's - Lumos																																			
UTPL00001020	VDOT R/A Final Utility Relocation Plan - Lumos	21	21-Oct-23	10-Nov-23	[Green bar] VDOT R/A Final Utility Relocation Plan - Lumos																																			
UTPL00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Lumos	5	11-Nov-23	15-Nov-23	[Green bar] VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Lumos																																			

Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025															
					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
UTPL00001040	Update VDOT RUMS with Utility Status Report Data - Lumos	3	16-Nov-23	18-Nov-23	Update VDOT RUMS with Utility Status Report Data - Lumos																																							
<b>Lumen</b>		62	18-Sep-23	18-Nov-23	▼ 18-Nov-23, Lumen																																							
UTPM00001000	Advance to Final Relocation Plan / Complete UT-9's - Lumen	30	18-Sep-23	17-Oct-23	■ Advance to Final Relocation Plan / Complete UT-9's - Lumen																																							
UTPM00001010	SFA Final Utility Relocation Plan / UT-9's - Lumen	3	18-Oct-23	20-Oct-23	SFA Final Utility Relocation Plan / UT-9's - Lumen																																							
UTPM00001020	VDOT R/A Final Utility Relocation Plan - Lumen	21	21-Oct-23	10-Nov-23	■ VDOT R/A Final Utility Relocation Plan - Lumen																																							
UTPM00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Lumen	5	11-Nov-23	15-Nov-23	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Lu																																							
UTPM00001040	Update VDOT RUMS with Utility Status Report Data - Lumen	3	16-Nov-23	18-Nov-23	Update VDOT RUMS with Utility Status Report Data - Lumen																																							
<b>City of Norfolk Fiber</b>		62	18-Sep-23	18-Nov-23	▼ 18-Nov-23, City of Norfolk Fiber																																							
UTPN00001000	Advance to Final Relocation Plan / Complete UT-9's - City of Norfolk Fiber	30	18-Sep-23	17-Oct-23	■ Advance to Final Relocation Plan / Complete UT-9's - City of Norfolk Fib																																							
UTPN00001010	SFA Final Utility Relocation Plan / UT-9's - City of Norfolk Fiber	3	18-Oct-23	20-Oct-23	SFA Final Utility Relocation Plan / UT-9's - City of Norfolk Fiber																																							
UTPN00001020	VDOT R/A Final Utility Relocation Plan - City of Norfolk Fiber	21	21-Oct-23	10-Nov-23	■ VDOT R/A Final Utility Relocation Plan - City of Norfolk Fiber																																							
UTPN00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - City of Norfolk Fiber	5	11-Nov-23	15-Nov-23	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Cit																																							
UTPN00001040	Update VDOT RUMS with Utility Status Report Data - City of Norfolk Fiber	3	16-Nov-23	18-Nov-23	Update VDOT RUMS with Utility Status Report Data - City of Norfolk																																							
<b>Qwest</b>		62	18-Sep-23	18-Nov-23	▼ 18-Nov-23, Qwest																																							
UTPQ00001000	Advance to Final Relocation Plan / Complete UT-9's - Qwest	30	18-Sep-23	17-Oct-23	■ Advance to Final Relocation Plan / Complete UT-9's - Qwest																																							
UTPQ00001010	SFA Final Utility Relocation Plan / UT-9's - Qwest	3	18-Oct-23	20-Oct-23	SFA Final Utility Relocation Plan / UT-9's - Qwest																																							
UTPQ00001020	VDOT R/A Final Utility Relocation Plan - Qwest	21	21-Oct-23	10-Nov-23	■ VDOT R/A Final Utility Relocation Plan - Qwest																																							
UTPQ00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Qwest	5	11-Nov-23	15-Nov-23	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Qw																																							
UTPQ00001040	Update VDOT RUMS with Utility Status Report Data - Qwest	3	16-Nov-23	18-Nov-23	Update VDOT RUMS with Utility Status Report Data - Qwest																																							
<b>City of Norfolk Department of Utilities</b>		62	18-Sep-23	18-Nov-23	▼ 18-Nov-23, City of Norfolk Department of Utilities																																							
UTPU00001000	Advance to Final Relocation Plan / Complete UT-9's - City of Norfolk Department of Utilities	30	18-Sep-23	17-Oct-23	■ Advance to Final Relocation Plan / Complete UT-9's - City of Norfolk De																																							
UTPU00001010	SFA Final Utility Relocation Plan / UT-9's - City of Norfolk Department of Utilities	3	18-Oct-23	20-Oct-23	SFA Final Utility Relocation Plan / UT-9's - City of Norfolk Department o																																							
UTPU00001020	VDOT R/A Final Utility Relocation Plan - City of Norfolk Department of Utilities	21	21-Oct-23	10-Nov-23	■ VDOT R/A Final Utility Relocation Plan - City of Norfolk Department																																							
UTPU00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - City of Norfolk Department of Utilities	5	11-Nov-23	15-Nov-23	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Cit																																							
UTPU00001040	Update VDOT RUMS with Utility Status Report Data - City of Norfolk Department of Utilities	3	16-Nov-23	18-Nov-23	Update VDOT RUMS with Utility Status Report Data - City of Norfolk																																							
<b>Verizon</b>		62	18-Sep-23	18-Nov-23	▼ 18-Nov-23, Verizon																																							
UTPV00001000	Advance to Final Relocation Plan / Complete UT-9's - Verizon	30	18-Sep-23	17-Oct-23	■ Advance to Final Relocation Plan / Complete UT-9's - Verizon																																							
UTPV00001010	SFA Final Utility Relocation Plan / UT-9's - Verizon	3	18-Oct-23	20-Oct-23	SFA Final Utility Relocation Plan / UT-9's - Verizon																																							
UTPV00001020	VDOT R/A Final Utility Relocation Plan - Verizon	21	21-Oct-23	10-Nov-23	■ VDOT R/A Final Utility Relocation Plan - Verizon																																							
UTPV00001030	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Verizon	5	11-Nov-23	15-Nov-23	VDOT Approves Final Utility Relocation Plan / DB Issues NTP to - Ver																																							
UTPV00001040	Update VDOT RUMS with Utility Status Report Data - Verizon	3	16-Nov-23	18-Nov-23	Update VDOT RUMS with Utility Status Report Data - Verizon																																							
<b>Utility Relocations</b>		70	25-Oct-23	02-Jan-24	▼ 02-Jan-24, Utility Relocations																																							
<b>Crown Castle</b>		17	24-Nov-23	10-Dec-23	▼ 10-Dec-23, Crown Castle																																							
UTUC00001000	Perform Utility Relocation - EB I-64 Bridge over Granby Street - Pier 3 - Crown Castle	15	24-Nov-23	08-Dec-23	■ Perform Utility Relocation - EB I-64 Bridge over Granby Street - Pier																																							
UTUC00002000	Relocations Complete - Secure UT-11's - Crown Castle	1	09-Dec-23	09-Dec-23	Relocations Complete - Secure UT-11's - Crown Castle																																							
UTUC00003000	Complete Utility As-builts - Crown Castle	1	10-Dec-23	10-Dec-23	Complete Utility As-builts - Crown Castle																																							
<b>Dominion Energy</b>		70	25-Oct-23	02-Jan-24	▼ 02-Jan-24, Dominion Energy																																							
UTUD00001000	Perform Utility Relocation - EB I-64 Bridge over Granby Street - Pier 1 - Dominion Energy	45	25-Oct-23	08-Dec-23	■ Perform Utility Relocation - EB I-64 Bridge over Granby Street - Pier																																							
UTUD00001010	Perform Utility Relocation - EB I-64 Bridge over Little Creek Road - Pier 1 - Dominion Energy	45	19-Nov-23	02-Jan-24	■ Perform Utility Relocation - EB I-64 Bridge over Little Creek Roa																																							
UTUD00002000	Relocations Complete - Secure UT-11's - Dominion Energy	1	09-Dec-23	09-Dec-23	Relocations Complete - Secure UT-11's - Dominion Energy																																							
UTUD00003000	Complete Utility As-builts - Dominion Energy	1	10-Dec-23	10-Dec-23	Complete Utility As-builts - Dominion Energy																																							
<b>Virginia Natrual Gas</b>		32	25-Oct-23	25-Nov-23	▼ 25-Nov-23, Virginia Natrual Gas																																							
UTUG00001000	Perform Utility Relocation - EB & WB I-64 Bridges over Tidewater Drive - Pier 1 - Virginia Natural Gas	30	25-Oct-23	23-Nov-23	■ Perform Utility Relocation - EB & WB I-64 Bridges over Tidewater D																																							
UTUG00002000	Relocations Complete - Secure UT-11's - Virginia Natural Gas	1	24-Nov-23	24-Nov-23	Relocations Complete - Secure UT-11's - Virginia Natural Gas																																							







Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025															
					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
PCCS00007310	SFA - Bridge Beam Shop Drawings - I-64 EB over Tidewater Drive Bridge	1	29-Aug-23	29-Aug-23	SFA - Bridge Beam Shop Drawings - I-64 EB over Tidewater Drive Bridge																																							
PCCS00007020	VDOT R/A - Substructure Rebar Shop Drawings - I-64 EB over Tidewater Drive Bridge	21	30-Aug-23	19-Sep-23	■ VDOT R/A - Substructure Rebar Shop Drawings - I-64 EB over Tidewater Drive Bridge																																							
PCCS00007120	VDOT R/A - Superstructure Rebar Shop Drawings - I-64 EB over Tidewater Drive Bridge	21	30-Aug-23	19-Sep-23	■ VDOT R/A - Superstructure Rebar Shop Drawings - I-64 EB over Tidewater Drive Bridge																																							
PCCS00007220	VDOT R/A - Foundation Material Shop Drawings - I-64 EB over Tidewater Drive Bridge	21	30-Aug-23	19-Sep-23	■ VDOT R/A - Foundation Material Shop Drawings - I-64 EB over Tidewater Drive Bridge																																							
PCCS00007320	VDOT R/A - Bridge Beam Shop Drawings - I-64 EB over Tidewater Drive Bridge	21	30-Aug-23	19-Sep-23	■ VDOT R/A - Bridge Beam Shop Drawings - I-64 EB over Tidewater Drive Bridge																																							
PCCS00008000	Prepare - Substructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge	20	30-Aug-23	27-Sep-23	■ Prepare - Substructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008100	Prepare - Superstructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge	20	30-Aug-23	27-Sep-23	■ Prepare - Superstructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008200	Prepare - Foundation Material Shop Drawings - I-64 WB over Tidewater Drive Bridge	20	30-Aug-23	27-Sep-23	■ Prepare - Foundation Material Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008300	Prepare - Bridge Beam Shop Drawings - I-64 WB over Tidewater Drive Bridge	20	30-Aug-23	27-Sep-23	■ Prepare - Bridge Beam Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00013000	Prepare - Substructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge	20	30-Aug-23	27-Sep-23	■ Prepare - Substructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge																																							
PCCS00013100	Prepare - Superstructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge	20	30-Aug-23	27-Sep-23	■ Prepare - Superstructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge																																							
PCCS00009000	Prepare - Substructure Rebar Shop Drawings - I-64 WB over Little Creek Road	20	13-Sep-23	10-Oct-23	■ Prepare - Substructure Rebar Shop Drawings - I-64 WB over Little Creek Road																																							
PCCS00009100	Prepare - Superstructure Rebar Shop Drawings - I-64 WB over Little Creek Road	20	13-Sep-23	10-Oct-23	■ Prepare - Superstructure Rebar Shop Drawings - I-64 WB over Little Creek Road																																							
PCCS00010010	SFA - Substructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge	1	13-Sep-23	13-Sep-23	SFA - Substructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00010110	SFA - Superstructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge	1	13-Sep-23	13-Sep-23	SFA - Superstructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00010210	SFA - Foundation Material Shop Drawings - I-64 EB over Little Creek Road Bridge	1	13-Sep-23	13-Sep-23	SFA - Foundation Material Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00010310	SFA - Bridge Beam Shop Drawings - I-64 EB over Little Creek Road Bridge	1	13-Sep-23	13-Sep-23	SFA - Bridge Beam Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00010020	VDOT R/A - Substructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge	21	14-Sep-23	04-Oct-23	■ VDOT R/A - Substructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00010120	VDOT R/A - Superstructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge	21	14-Sep-23	04-Oct-23	■ VDOT R/A - Superstructure Rebar Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00010220	VDOT R/A - Foundation Material Shop Drawings - I-64 EB over Little Creek Road Bridge	21	14-Sep-23	04-Oct-23	■ VDOT R/A - Foundation Material Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00010320	VDOT R/A - Bridge Beam Shop Drawings - I-64 EB over Little Creek Road Bridge	21	14-Sep-23	04-Oct-23	■ VDOT R/A - Bridge Beam Shop Drawings - I-64 EB over Little Creek Road Bridge																																							
PCCS00006010	SFA Signage Shop Drawings	1	19-Sep-23	19-Sep-23	SFA Signage Shop Drawings																																							
PCCS00006020	VDOT R/A Signage Shop Drawings	21	20-Sep-23	10-Oct-23	■ VDOT R/A Signage Shop Drawings																																							
PCCS00014010	SFA - Substructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge	1	20-Sep-23	20-Sep-23	SFA - Substructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge																																							
PCCS00014110	SFA - Superstructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge	1	20-Sep-23	20-Sep-23	SFA - Superstructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge																																							
PCCS00014020	VDOT R/A - Substructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge	21	21-Sep-23	11-Oct-23	■ VDOT R/A - Substructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge																																							
PCCS00014120	VDOT R/A - Superstructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge	21	21-Sep-23	11-Oct-23	■ VDOT R/A - Superstructure Rebar Shop Drawings - I-64 HOV over I-564 & Little Creek Road Bridge																																							
PCCS00008010	SFA - Substructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge	1	28-Sep-23	28-Sep-23	SFA - Substructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008110	SFA - Superstructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge	1	28-Sep-23	28-Sep-23	SFA - Superstructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008210	SFA - Foundation Material Shop Drawings - I-64 WB over Tidewater Drive Bridge	1	28-Sep-23	28-Sep-23	SFA - Foundation Material Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008310	SFA - Bridge Beam Shop Drawings - I-64 WB over Tidewater Drive Bridge	1	28-Sep-23	28-Sep-23	SFA - Bridge Beam Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00013010	SFA - Substructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge	1	28-Sep-23	28-Sep-23	SFA - Substructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge																																							
PCCS00013110	SFA - Superstructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge	1	28-Sep-23	28-Sep-23	SFA - Superstructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge																																							
PCCS00008020	VDOT R/A - Substructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge	21	29-Sep-23	19-Oct-23	■ VDOT R/A - Substructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008120	VDOT R/A - Superstructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge	21	29-Sep-23	19-Oct-23	■ VDOT R/A - Superstructure Rebar Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008220	VDOT R/A - Foundation Material Shop Drawings - I-64 WB over Tidewater Drive Bridge	21	29-Sep-23	19-Oct-23	■ VDOT R/A - Foundation Material Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00008320	VDOT R/A - Bridge Beam Shop Drawings - I-64 WB over Tidewater Drive Bridge	21	29-Sep-23	19-Oct-23	■ VDOT R/A - Bridge Beam Shop Drawings - I-64 WB over Tidewater Drive Bridge																																							
PCCS00013020	VDOT R/A - Substructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge	21	29-Sep-23	19-Oct-23	■ VDOT R/A - Substructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge																																							
PCCS00013120	VDOT R/A - Superstructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge	21	29-Sep-23	19-Oct-23	■ VDOT R/A - Superstructure Rebar Shop Drawings - I-64 WB over Granby Street Bridge																																							
PCCS00009010	SFA - Substructure Rebar Shop Drawings - I-64 WB over Little Creek Road	1	11-Oct-23	11-Oct-23	SFA - Substructure Rebar Shop Drawings - I-64 WB over Little Creek Road																																							
PCCS00009110	SFA - Superstructure Rebar Shop Drawings - I-64 WB over Little Creek Road	1	11-Oct-23	11-Oct-23	SFA - Superstructure Rebar Shop Drawings - I-64 WB over Little Creek Road																																							
PCCS00001000	Prepare MSE Wall Structures Shop Drawings	20	12-Oct-23	08-Nov-23	■ Prepare MSE Wall Structures Shop Drawings																																							
PCCS00002000	Prepare Sound Barrier Structures Shop Drawings	20	12-Oct-23	08-Nov-23	■ Prepare Sound Barrier Structures Shop Drawings																																							
PCCS00003000	Prepare Combination Wall Shop Drawings	20	12-Oct-23	08-Nov-23	■ Prepare Combination Wall Shop Drawings																																							



Activity ID	Activity Name	Original Duration	Start	Finish	2023												2024												2025														
					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
<b>Section 1 - Sta. 964+34 to Sta. 1017+00</b>					14	12-Sep-23	04-Oct-23	▼ 04-Oct-23, Section 1 - Sta. 964+34 to Sta. 1017+00																																			
CN0E1R001000	Perform Shoulder Strengthening - I-64 EB Sta. 964+34 to 1017+00 RT - Pre-Construction Phase	3	12-Sep-23	14-Sep-23	Perform Shoulder Strengthening - I-64 EB Sta. 964+34 to 1017+00 RT - Pre-																																						
CN0E1R002000	Perform Shoulder Strengthening - I-64 EB Sta. 964+34 to 1017+00 LT - Pre-Construction Phase	8	21-Sep-23	04-Oct-23	█ Perform Shoulder Strengthening - I-64 EB Sta. 964+34 to 1017+00 LT - Pr																																						
<b>Section 2 - Sta. 1017+00 to Sta. 1085+50</b>					19	18-Sep-23	18-Oct-23	▼ 18-Oct-23, Section 2 - Sta. 1017+00 to Sta. 1085+50																																			
CN0E2R001000	Perform Shoulder Strengthening - I-64 EB Sta. 1017+00 to 1085+50 RT - Pre-Construction Phase	3	18-Sep-23	20-Sep-23	Perform Shoulder Strengthening - I-64 EB Sta. 1017+00 to 1085+50 RT - Pr																																						
CN0E2R002000	Perform Shoulder Strengthening - I-64 EB Sta. 1017+00 to 1085+50 LT - Section 2 - Pre-Construction Phase	8	05-Oct-23	18-Oct-23	█ Perform Shoulder Strengthening - I-64 EB Sta. 1017+00 to 1085+50 LT -																																						
<b>I-64 Westbound</b>					22	19-Oct-23	30-Nov-23	▼ 30-Nov-23, I-64 Westbound																																			
<b>Section 1 - Sta. 2810+42 to Sta. 3030+00</b>					14	19-Oct-23	14-Nov-23	▼ 14-Nov-23, Section 1 - Sta. 2810+42 to Sta. 3030+00																																			
CN0W1R001000	Perform Shoulder Strengthening - I-64 WB Sta. 2810+42 to 3030+00 LT - Pre-Construction Phase	3	19-Oct-23	24-Oct-23	Perform Shoulder Strengthening - I-64 WB Sta. 2810+42 to 3030+00 LT																																						
CN0W1R002000	Perform Shoulder Strengthening - I-64 WB Sta. 2810+42 to 3030+00 RT - Section 1 - Pre-Construction Phase	8	31-Oct-23	14-Nov-23	█ Perform Shoulder Strengthening - I-64 WB Sta. 2810+42 to 3030+00 R																																						
<b>Section 2 - Sta. 3030+00 to Sta. 3076+66</b>					19	25-Oct-23	30-Nov-23	▼ 30-Nov-23, Section 2 - Sta. 3030+00 to Sta. 3076+66																																			
CN0W2R001000	Perform Shoulder Strengthening - I-64 WB Sta. 3030+00 to 3076+66 LT - Pre-Construction Phase	3	25-Oct-23	30-Oct-23	Perform Shoulder Strengthening - I-64 WB Sta. 3030+00 to 3076+66 LT																																						
CN0W2R002000	Perform Shoulder Strengthening - I-64 WB Sta. 3030+00 to 3076+66 RT - Section 2 - Pre-Construction Phase	8	16-Nov-23	30-Nov-23	█ Perform Shoulder Strengthening - I-64 WB Sta. 3030+00 to 3076+66																																						
<b>Phase 1</b>					403	20-Jun-23	23-May-25	▼ 23-May-25, Phase																																			
<b>I-64 Eastbound</b>					278	14-Nov-23	26-Mar-25	▼ 26-Mar-25, I-64 Eastbo																																			
<b>Section 1 - Sta. 964+34 to Sta. 1017+00</b>					269	04-Dec-23	26-Mar-25	▼ 26-Mar-25, Section 1 - S																																			
CN1E1T001000	Install Traffic Control Measures - I-64 EB - Section 1 - Phase 1	10	04-Dec-23	19-Dec-23	█ Install Traffic Control Measures - I-64 EB - Section 1 - Phase 1																																						
CN1E1E001000	Install Erosion Control Measures - I-64 EB - Section 1 - Phase 1	10	20-Dec-23	16-Jan-24	█ Install Erosion Control Measures - I-64 EB - Section 1 - Phase 1																																						
CN1E1SAA0100	Demo Portion Existing Superstructure - I-64 EB over Granby Street Bridge - Phase 1	10	20-Dec-23	16-Jan-24	█ Demo Portion Existing Superstructure - I-64 EB over Granby Stre																																						
CN1E1SCA0100	Demo Portion Existing Superstructure - I-64 EB over Little Creek Road Bridge - Phase 1	10	20-Dec-23	16-Jan-24	█ Demo Portion Existing Superstructure - I-64 EB over Little Cree																																						
CN1E1E001010	Clear & Grub - I-64 EB - Section 1 - Phase 1	10	02-Jan-24	18-Jan-24	█ Clear & Grub - I-64 EB - Section 1 - Phase 1																																						
CN1E1R001000	Sawcut - Sta. 964+34 to 1017+00 RT - Section 1 - I-64 EB - Phase 1	5	17-Jan-24	25-Jan-24	█ Sawcut - Sta. 964+34 to 1017+00 RT - Section 1 - I-64 EB - Pha																																						
CN1E1SABA100	Excavate - Abutment A - I-64 EB over Granby Street Bridge - Phase 1	2	17-Jan-24	18-Jan-24	Excavate - Abutment A - I-64 EB over Granby Street Bridge - Pha																																						
CN1E1SAA0110	Jack/Repair Beam Seat/Replace Bearings - I-64 EB over Granby Street Bridge - Phase 1	20	17-Jan-24	21-Feb-24	█ Jack/Repair Beam Seat/Replace Bearings - I-64 EB over Gran																																						
CN1E1SAA0120	Perform Surface Repairs - Substructure - I-64 EB over Granby Street Bridge - Phase 1	5	17-Jan-24	25-Jan-24	█ Perform Surface Repairs - Substructure - I-64 EB over Granby St																																						
CN1E1SAC1500	F/R/P Joint Closures - I-64 EB over Granby Street Bridge - Phase 1	15	17-Jan-24	13-Feb-24	█ F/R/P Joint Closures - I-64 EB over Granby Street Bridge - Pha																																						
CN1E1SCBA100	Excavate - Abutment A - I-64 EB over Little Creek Road Bridge - Phase 1	2	17-Jan-24	18-Jan-24	Excavate - Abutment A - I-64 EB over Little Creek Road Bridge -																																						
CN1E1SCA0110	Jack/Repair Beam Seat/Replace Bearings - I-64 EB over Little Creek Road Bridge - Phase 1	20	17-Jan-24	21-Feb-24	█ Jack/Repair Beam Seat/Replace Bearings - I-64 EB over Littl																																						
CN1E1SCA0120	Perform Surface Repairs - Substructure - I-64 EB over Little Creek Road Bridge - Phase 1	5	17-Jan-24	25-Jan-24	█ Perform Surface Repairs - Substructure - I-64 EB over Little Cre																																						
CN1E1SCC1500	F/R/P Joint Closures - I-64 EB over Little Creek Road Bridge - Phase 1	15	17-Jan-24	13-Feb-24	█ F/R/P Joint Closures - I-64 EB over Little Creek Road Bridge -																																						
CN1E1SABA110	Demo Portion Existing - Abutment A - I-64 EB over Granby Street Bridge - Phase 1	5	22-Jan-24	30-Jan-24	█ Demo Portion Existing - Abutment A - I-64 EB over Granby Stre																																						
CN1E1SABC100	Excavate - Pier 1 - I-64 EB over Granby Street Bridge - Phase 1	3	22-Jan-24	25-Jan-24	Excavate - Pier 1 - I-64 EB over Granby Street Bridge - Phase 1																																						
CN1E1SCBA110	Demo Portion Existing - Abutment A - I-64 EB over Little Creek Road Bridge - Phase 1	5	22-Jan-24	30-Jan-24	█ Demo Portion Existing - Abutment A - I-64 EB over Little Cree																																						
CN1E1SCBC100	Excavate - Pier 1 - I-64 EB over Little Creek Road Bridge - Phase 1	3	22-Jan-24	25-Jan-24	Excavate - Pier 1 - I-64 EB over Little Creek Road Bridge - Phas																																						
CN1E1R001010	Remove Existing Pavement - Sta. 964+34 to 1017+00 RT - Section 1 - I-64 EB - Phase 1	11	29-Jan-24	14-Feb-24	█ Remove Existing Pavement - Sta. 964+34 to 1017+00 RT - Se																																						
CN1E1SABC110	Construct Deep Foundation - Pier 1 - I-64 EB over Granby Street Bridge - Phase 1	3	29-Jan-24	31-Jan-24	Construct Deep Foundation - Pier 1 - I-64 EB over Granby Stre																																						
CN1E1SABD100	Excavate - Pier 2 - I-64 EB over Granby Street Bridge - Phase 1	3	29-Jan-24	31-Jan-24	Excavate - Pier 2 - I-64 EB over Granby Street Bridge - Phase 1																																						
CN1E1SCBC110	Construct Deep Foundation - Pier 1 - I-64 EB over Little Creek Road Bridge - Phase 1	3	29-Jan-24	31-Jan-24	Construct Deep Foundation - Pier 1 - I-64 EB over Little Cree																																						
CN1E1SCBD100	Excavate - Pier 2 - I-64 EB over Little Creek Road Bridge - Phase 1	3	29-Jan-24	31-Jan-24	Excavate - Pier 2 - I-64 EB over Little Creek Road Bridge - Phas																																						
CN1E1SABA120	Construct Deep Foundation - Abutment A - I-64 EB over Granby Street Bridge - Phase 1	4	31-Jan-24	06-Feb-24	█ Construct Deep Foundation - Abutment A - I-64 EB over Grant																																						
CN1E1SCBA120	Construct Deep Foundation - Abutment A - I-64 EB over Little Creek Road Bridge - Phase 1	4	31-Jan-24	06-Feb-24	█ Construct Deep Foundation - Abutment A - I-64 EB over Little																																						
CN1E1SABC120	F/R/P Footing - Pier 1 - I-64 EB over Granby Street Bridge - Phase 1	3	01-Feb-24	06-Feb-24	█ F/R/P Footing - Pier 1 - I-64 EB over Granby Street Bridge - Ph																																						
CN1E1SABD110	Construct Deep Foundation - Pier 2 - I-64 EB over Granby Street Bridge - Phase 1	3	01-Feb-24	06-Feb-24	█ Construct Deep Foundation - Pier 2 - I-64 EB over Granby Stre																																						
CN1E1SABE100	Excavate - Pier 3 - I-64 EB over Granby Street Bridge - Phase 1	3	01-Feb-24	06-Feb-24	█ Excavate - Pier 3 - I-64 EB over Granby Street Bridge - Phase 1																																						











































