

Technical Proposal Checklist and Contents



ATTACHMENT 4.0.1.1
VDOT BRIDGES OVER I-95 BUNDLING
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	PDF p2
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	PDF p72
Letter of Submittal	NA	Sections 4.1		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	PDF p6
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	PDF p6
Authorized representative's original signature	NA	Section 4.1.1	yes	PDF p6
Declaration of intent	NA	Section 4.1.2	yes	PDF p6
120 day declaration	NA	Section 4.1.3	yes	PDF p6
Point of Contact information	NA	Section 4.1.4	yes	PDF p6
Principal Officer information	NA	Section 4.1.5	yes	PDF p6
Final Completion Date	NA	Section 4.1.6	yes	PDF p6
Unique Milestone Date	NA	Section 4.1.7	yes	PDF p6
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.8	no	PDF p74-p77
Certification Regarding Debarment Forms	Attachment 11.9.6(a) Attachment 11.9.6(b)	Section 4.1.9	no	PDF p78-p84
Written statement of percent DBE participation (9%)	NA	Section 4.1.10	yes	PDF p6

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Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Offeror's Qualifications	NA	Section 4.2		PDF p8
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	PDF p8
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	PDF p8
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	PDF p8
Design Concept	NA	Section 4.3		PDF p10
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	PDF p12
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	PDF p17
Project Approach	NA	Section 4.4		PDF p21
Environmental Management	NA	Section 4.4.1	yes	PDF p21
Utilities	NA	Section 4.4.2	yes	PDF p25
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.3	yes	PDF p32
Construction of Project	NA	Section 4.5		PDF p41
Sequence of Construction	NA	Section 4.5.1	yes	PDF p41
Transportation Management Plan	NA	Section 4.5.2	yes	PDF p48

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VDOT BRIDGES OVER I-95 BUNDLING
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Demolition Plan	NA	Section 4.5.3	yes	PDF p59
Proposal Schedule	NA	Section 4.6		PDF p65
Proposal Schedule	NA	Section 4.6	no	VOL II, PDF p29-49p
Proposal Schedule Narrative	NA	Section 4.6	no	PDF p65
Proposal Schedule in electronic format (PDF)	NA	Section 4.6	no	VOL II, PDF p29-49p

4.1 Letter of Submittal





August 27, 2021

Commonwealth of Virginia
Department of Transportation (VDOT)
Alternative Project Delivery
1401 E. Broad Street
Richmond, VA 23219
Attn: Joseph A. Clarke, PE, DBIA

RE: VDOT Bridges Over I-95 Superstructure Replacement and Rehabilitation Bundling, City of Richmond, Virginia
UPC 111300 (U000-127-023, P101, R201, C501, B601; STP-5A27(802))
UPC 111294 (0064-127-022, P101, B661; NHPP-064-3(510))
UPC 113375 (0250-127-050, P101, R201, C501; NHPP-BR04(307))
UPC 113388 (0004-127-051, P101, R201, C501; NHPP-BR04(308))
UPC 118484 (9999-127-107, P101, R202, C501, B602; NHPP-5A27(784))
Contract ID No.: C00111300DB107

Dear Mr. Clarke:

Archer Western Construction, LLC (AWC), as the offeror, along with WSP USA Inc. (WSP) as our lead designer, is pleased to submit our technical proposal for the **VDOT Bridges Over I-95 Superstructure Replacement and Rehabilitation Bundling**. Our proposal is organized in accordance with the RFP. Volume I includes our narrative and the required forms and appendices. Volume II consists of our design concept graphics and schedule. Also included are the Proposal Schedule native files (.XER format) and the two required layered PDF plots of the five bridges in plan view.

4.1.1 OFFEROR: The full legal name and address of the Offeror is Archer Western Construction, LLC, 13454 Sunrise Valley Drive, Suite 440, Herndon, VA 20171.

4.1.2-4.1.3 DECLARATION OF INTENT TO ENTER INTO A CONTRACT: AWC, will enter into a contract with VDOT for the Bridges Over I-95 Superstructure Replacement and Rehabilitation Bundling Project, in accordance with the terms of the RFP and subsequent addendum. Further, the offer represented by our Technical and Price Proposals will remain in full force and effect for one hundred and twenty (120) days after the date that the price proposal is submitted.

4.1.4 OFFEROR’S POINT OF CONTACT:
David Pupkiewicz, FDBIA, Mgr Alternative Pursuits
13454 Sunrise Valley Dr, Suite 440
Herndon, VA 20171
Phone: 404-721-5050 Fax: 301-347-4681
dpupkiewicz@walshgroup.com

4.1.5 PRINCIPAL OFFICER OF THE OFFEROR:
EJ O’Neill, Vice President
13454 Sunrise Valley Dr, Suite 440
Herndon, VA 20171
Phone: 301-347-4680 Fax: 301-347-4681
ejoneill@walshgroup.com

4.1.6 FINAL COMPLETION DATE: December 20, 2024

4.1.7 UNIQUE MILESTONE DATES (AND LDS): Unique Milestone dates and associated LDs are not included in this proposal.

4.1.8 PROPOSAL PAYMENT AGREEMENT: Please refer to the Appendix for executed Attachment 9.3.1.

4.1.9 DEBARMENT FORMS: Please refer to the Appendix for executed debarment forms 11.8.6(a) and 11.8.6(b)

4.1.10 DBE PARTICIPATION: AWC is committed to achieving the 9% DBE goal for the entire value of the contract.

We appreciate the opportunity to submit our technical proposal for the design and construction of the **VDOT Bridges Over I-95 Superstructure Replacement and Rehabilitation Bundling Project**. In consideration of our extensive experience and project approach, we are confident that the AWC Team has the professional and financial resources to make the project a resounding success. We look forward to working with you on this critical project in the City of Richmond.

Sincerely,
Archer Western Construction, LLC


EJ O’Neill
Vice President

4.2 Offeror's Qualifications





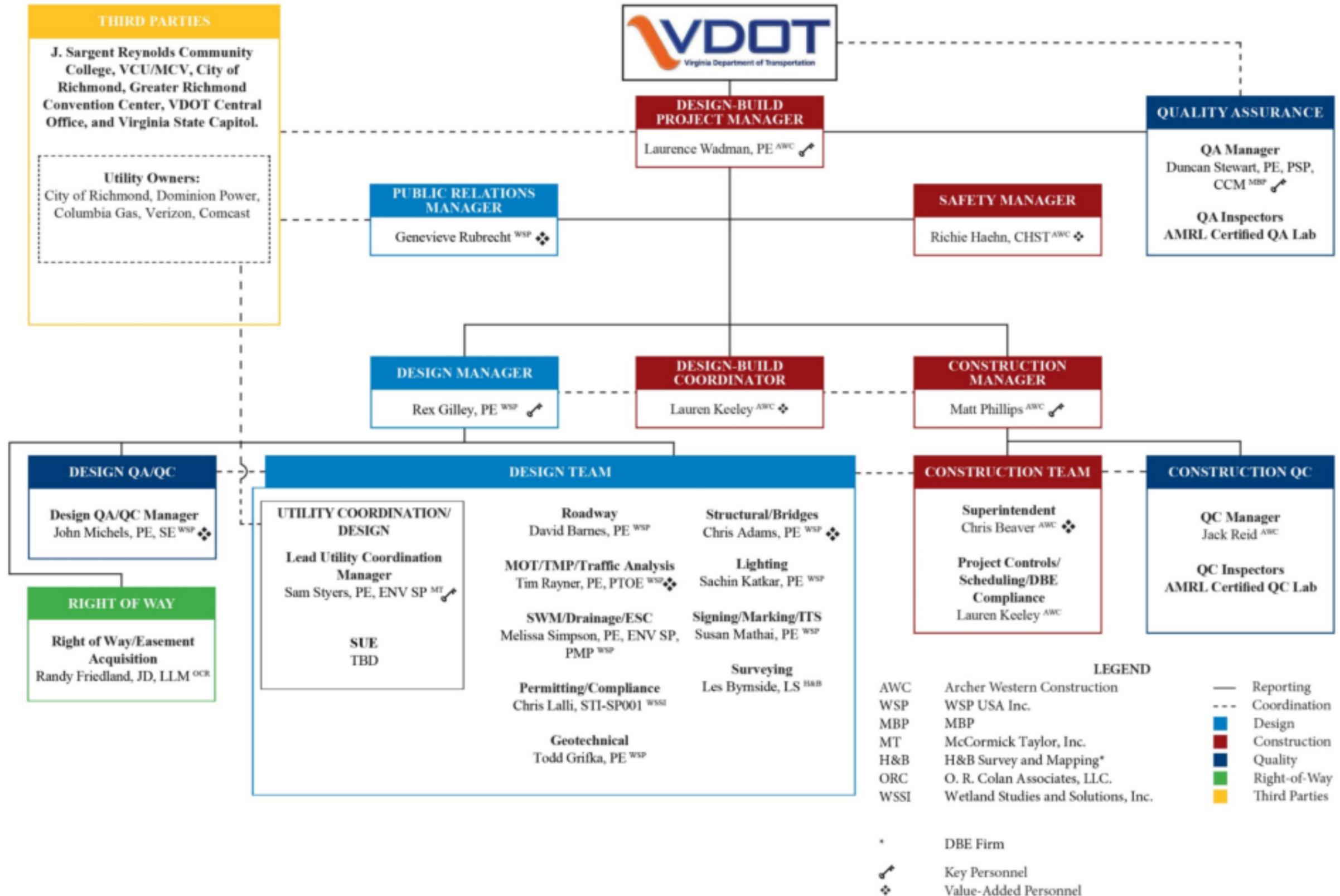
4.2 OFFEROR'S QUALIFICATIONS

4.2.1 CONFIRMATION

AWC confirms that the information contained in our Statement of Qualifications (SOQ) remains true and accurate in accordance with Part 1, Section 11.4.

4.2.2 ORGANIZATIONAL CHART

Our Project Organizational Chart identifies the “chain of command” and major functions to be performed, and their reporting relationships in managing, designing, and constructing the Project, including quality control/quality assurance. As there are no changes to any key staff or the functional relationships among the participants as were identified in our SOQ, an updated narrative is not required.



4.3 Design Concept





4.3 DESIGN CONCEPT

As the AWC Team prepared our conceptual design and Technical Proposal, we did so with the recognition that VDOT already completed an extensive amount of work to develop the RFP and conceptual plans. We reviewed the RFP documents, including information package documents, and held weekly meetings to discuss the scope of the Project and identify areas where enhancements could be implemented. Based on our extensive efforts to date, our Team has determined and incorporated modifications and enhancements which further our goals to:

- Improve safety for the traveling public, construction personnel, and inspection staff;
- Improve traffic operations during construction;
- Complete the bridge replacements in two stages or utilize Accelerated Bridge Construction;
- Avoid and reduce property impacts;
- Reduce environmental impacts;
- Reduce the Project schedule; and
- Reduce long-term maintenance costs for VDOT.

In addition to achieving the goals above, our Team's concept:

- Meets or exceeds all scope elements listed in the RFP, including minimum vertical clearance of 15'-0" and bridge strike mitigation system;
- Meets or exceeds requirements listed in the Design Criteria Table;
- Results in limits of construction, to include all stormwater management facilities, which are within the existing/proposed right-of-way limits shown in the RFP Conceptual Plans with the exception of permanent and temporary easements; and
- Does not include design elements that require Design Exceptions and/or Design Waivers unless they are identified or included in the RFP or Addenda.

Our proposed designs for each bridge location, many of which are depicted in Volume II – Conceptual Project Plans, are described in detail in the following sections. Table 4.3-1 describes key design elements.

Design Element	Enhancement	Project Benefit
All bridges: replacement superstructure vertical profiles	Maintain existing grades	<ul style="list-style-type: none"> • Minimizes impact to other elements in this constrained urban environment • Simplifies utility coordination, schedule
All bridges: steel beams	Lighter weight than concrete, consistent with existing beams	<ul style="list-style-type: none"> • Allows re-use of existing abutments and piers with minimal modifications
E. Broad Street: lightweight concrete deck	Lighter pick weights for PCU's	<ul style="list-style-type: none"> • Less impacts on roadways for crane placement
E. Broad Street bridge deck	Utilize link slab over pier	<ul style="list-style-type: none"> • Eliminates deck joint over the pier to reduce maintenance costs
All bridges: replacement barriers off bridge	Provide attachment to new approach slabs rather than existing wing walls	<ul style="list-style-type: none"> • Crash test rating is enhanced as the loading transferred to the existing wing walls is minimized
All bridges: deck joints	Utilize micro-abutment details	<ul style="list-style-type: none"> • The elimination of joints reduces maintenance costs





Design Element	Enhancement	Project Benefit
All bridges: deck joints	Utilize micro-abutment details	<ul style="list-style-type: none"> Less invasive backwall removal avoids potential settlement issues
5 th Street deck width	Minimally narrower bridge	<ul style="list-style-type: none"> Allows a slightly smaller footprint allowing addition of water line Does not increase drainage requirements on I-95 below

Table 4.3-1 Key Design Elements

For each bridge superstructure replacement site, our Team's design will follow and meet or exceed the Design Criteria for each roadway as described in the Design Criteria Table in the RFP Technical Requirements (Part 2) Attachment 2.2.

- 1st Street will be designed as an Urban Major Collector (VDOT GS-7) with a design speed of 30 MPH using TC-5.11U maximum superelevation 4%, with Curb and Gutter and designed for a BUS-40/SU-40 vehicle.
- 4th Street will be designed as an Urban Minor Arterial (VDOT GS-6) with a design speed of 30 MPH using TC-5.11ULS maximum superelevation 2%, with Curb and Gutter and designed for a BUS-40/SU-40 vehicle.
- North of the I-95 SB Ramp, 5th Street will be designed as an Interchange Ramp (VDOT GS-R) with a design speed of 25 MPH using TC-5.11ULS maximum superelevation 2%, with Curb and Gutter and designed for a WB-67 vehicle. South of the I-95 SB Ramp, 5th Street will be designed as Other Principal Arterial (VDOT GS-5) with a design speed of 25 MPH using TC-5.11ULS maximum superelevation 2%, with Curb and Gutter and designed for a WB-67 vehicle.
- 7th Street will be designed as an Urban Minor Arterial (VDOT GS-6) with a design speed of 30 MPH using TC-5.11U maximum superelevation 4%, with Curb and Gutter and designed for a WB-67 vehicle.
- E. Broad Street will be designed as an Other Principal Arterial (VDOT GS-5) with a design speed of 30 MPH using TC-5.11U maximum superelevation 4%, with Curb and Gutter and designed for a WB-67 vehicle.

(b) the limits of construction, to include all stormwater management facilities, are within the existing/proposed right-of-way limits shown in the RFP Conceptual Plans with the exception of permanent and temporary easements

The proposed drainage improvements associated with the bridge replacements will be designed in accordance with the VDOT Drainage Manual, Virginia Stormwater Management Handbook, BMP Standards and Specifications, Virginia Erosion and Sediment Control Handbook, Virginia Erosion and Sediment Control Law and Regulations (9VAC25-840), the Virginia Stormwater Management Program Regulations (9VAC25-870), VDOT Illicit Discharge Detection and Elimination Program Manual, all applicable FHWA Hydraulic Standards, and all other standards and references provided in the technical requirements.

All existing and proposed drainage facilities within the Project limits that are disturbed or extended as part of the Project are considered functional elements of the final design and shall be rendered in a serviceable condition. A spread analysis will be performed for all existing and proposed inlets that are considered functional elements of the final design. The maximum design spread width and design storm requirements will be in accordance with Table 9-1 of the VDOT Drainage Manual. Existing inlets that do not meet these criteria have been replaced, or additional inlets have been added.

Stormwater management for the Project will meet Technical Criteria Part IIB of the Virginia DEQ regulations and Virginia State Code 9VAC25-870-66. All outfalls are assumed to be manmade and will be analyzed based on the 10-year design storm. At locations where the 10-year flow rate increases in the developed condition, it





must be attenuated to the pre-development 10-year flow rate by the use of SWM facilities. Two SWM facilities are proposed with the 5th Street improvements. All outfalls drain into a combined sewer system and therefore are exempt from water quality requirements of the Virginia Stormwater Management Program per Virginia State Code 62.1-44.15:34 Part C.

The limits of construction, including all stormwater management facilities, are within the existing/proposed right-of-way limits shown in the RFP Conceptual Plans, apart from permanent and temporary easements.

(c) not include design elements that require Design Exceptions and/ or Design Waivers unless they are identified or included in the RFP or Addendum

Our Team's design does not propose to modify existing horizontal or vertical roadway geometry for any of the five bridge superstructure locations on this project. Therefore we shall not require any Design Exceptions and/or Design Waivers beyond those identified or included in the RFP or Addendums.

4.3.1 CONCEPTUAL ROADWAY PLANS

(a) general geometry, including horizontal curve data and associated design speeds, the number, and widths of lanes and shoulders

Our Team's design will follow the Design Criteria for each roadway as described in the Design Criteria Table in the RFP Technical Requirements (Part 2) Attachment 2.2.

1st Street – designed as an Urban Major Collector (VDOT GS-7) with a design speed of 30 MPH using TC-5.11U maximum superelevation 4%, with Curb and Gutter and designed for a BUS-40/SU-40 vehicle. 1st Street will have one lane in each direction on the bridge structure and north of the bridge with a minimum lane width of 11 feet and width for on-street parking along with a sidewalk on both sides of the roadway. South of the intersection with East Duval Street, 1st Street will have one-way vehicle traffic southbound with a minimum lane width of 11 feet and space for on-street parking on both sides of the southbound travel lane, a minimum 3-foot buffer, then a 10-foot wide bike path for two 5-foot wide bike lanes running northbound and southbound, along with sidewalk on both sides of the roadway. As 1st Street crosses the intersection with East Duval Street, the roadway transitions in the northbound direction to carry one 11-foot lane of traffic northbound with a 3-foot buffer and a 6-foot bike lane across the bridge.

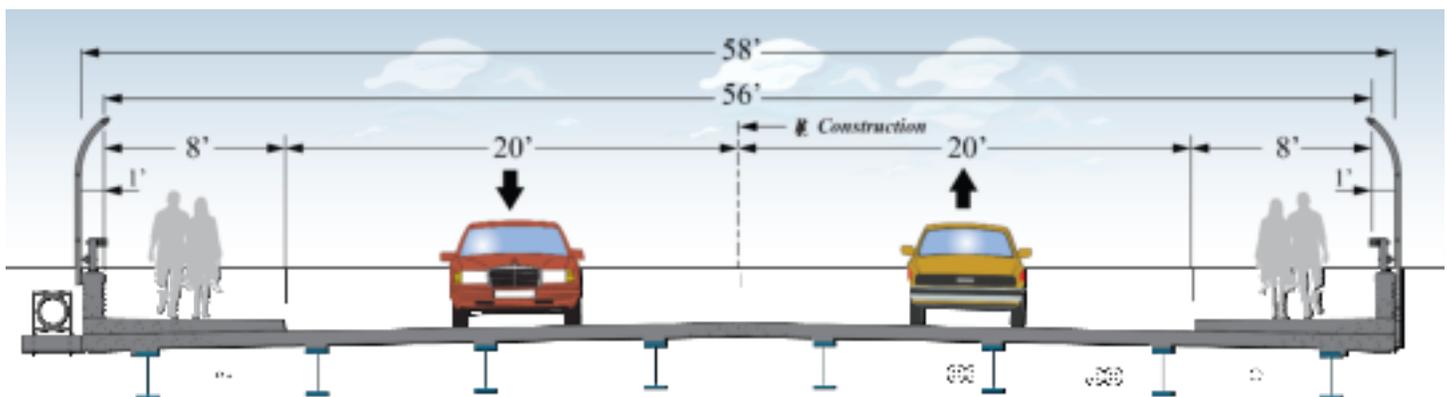


Figure 4.3.1-1 1st Street

4th Street – designed as an Urban Minor Arterial (VDOT GS-6) with a design speed of 30 MPH using TC-5.11ULS maximum superelevation 2%, with Curb and Gutter and designed for a BUS-40/SU-40 vehicle.. Northbound and southbound traffic on 5th Street will be separated by a raised median. Northbound 4th Street will carry 2-lanes of vehicular traffic as 4th Street, and N 3rd Street merge before the bridge carrying 4th Street over I-



95 with 12-foot lane widths, VDOT standard CG-6 curb and gutter, and 6-foot minimum sidewalk measured from the face of curb. Southbound 4th Street will have one 12-foot lane of vehicular traffic, a 5-foot buffer width, a 7-foot bike lane, VDOT standard CG-6 curb and gutter, and a 6-foot minimum sidewalk measured from the face of the curb.

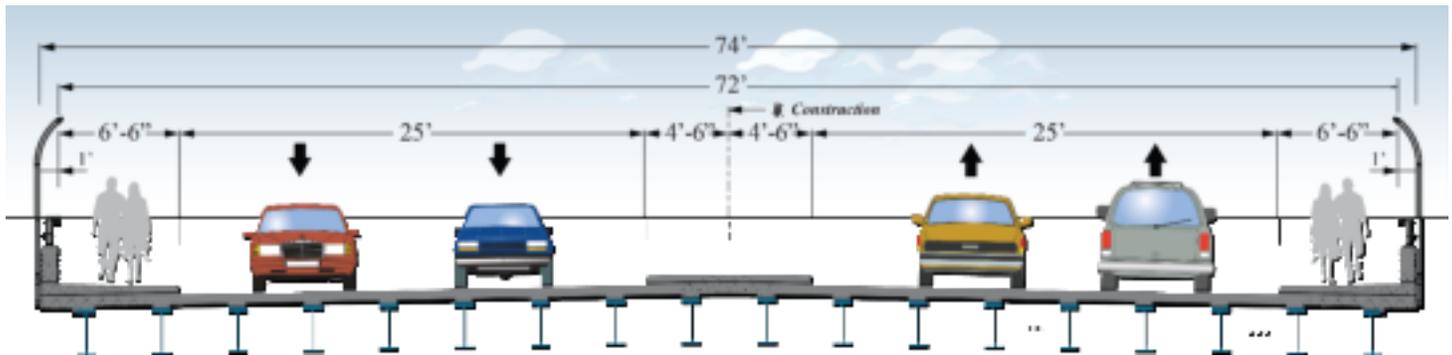


Figure 4.3.1-2 4th Street

5th Street – designed as an Interchange Ramp (VDOT GS-R) with a design speed of 25 MPH using TC-5.11ULS maximum superelevation 2%, with Curb and Gutter and designed for a WB-67 vehicle. South of the I-95 SB Ramp, 5th Street will be designed as Other Principal Arterial (VDOT GS-5) with a design speed of 25 MPH using TC-5.11ULS maximum superelevation 2%, with Curb and Gutter and designed for a WB-67 vehicle. South of the I-95 SB Ramp, 5th Street will have three 10.25-foot lanes of one-way travel and a 10.25-foot width for on-street parking with standard Richmond Curb left and right. North of the I-95 SB Ramp, 5th Street will have three lanes with a minimum width of 12-feet, variable width shoulders, and standard Richmond Curb left with VDOT CG-6 right and along both sides along the I-95 SB Ramp. North of the bridge over I-95, the roadway transitions from three lanes with varying width shoulders and standard VDOT CG-6 down to 2 lanes.

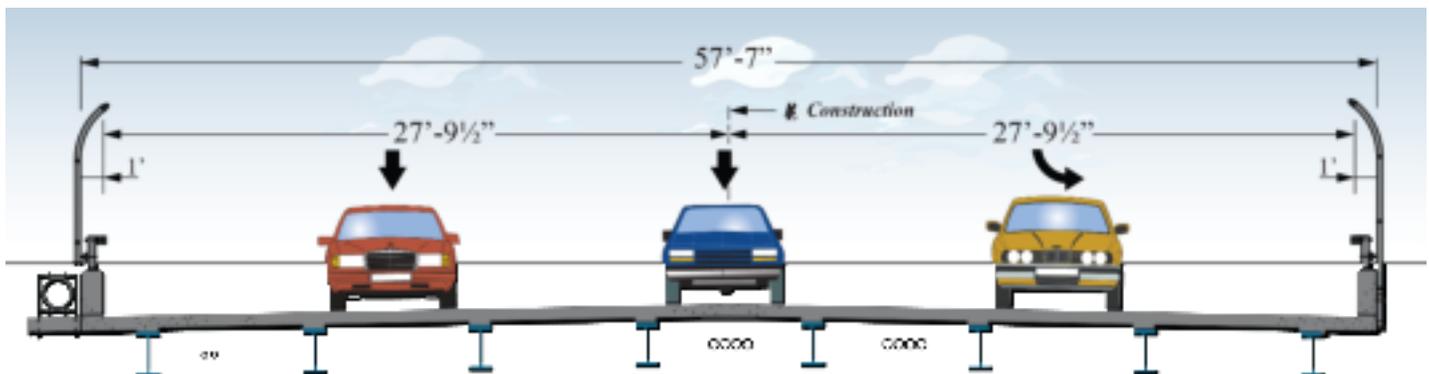


Figure 4.3.1-3 5th Street

7th Street – designed as an Urban Minor Arterial (VDOT GS-6) with a design speed of 30 MPH using TC-5.11U maximum superelevation 4%, with Curb and Gutter and designed for a WB-67 vehicle. South of the intersection with Duval Street, 7th Street will have northbound one-way traffic with two 12-foot minimum lanes right of the baseline and one 16-foot minimum lane left of the baseline with curb and gutter and sidewalk widths to match existing on both sides of the roadway. At the bridge approach just south of the bridge crossing of I-95, 7th Street will carry three lanes of traffic northbound, and one lane of traffic southbound with Richmond curb and sidewalk left and VDOT CG-6 right. North of the bridge over I-95, the two right lanes exit to the NB I-95 ramp.

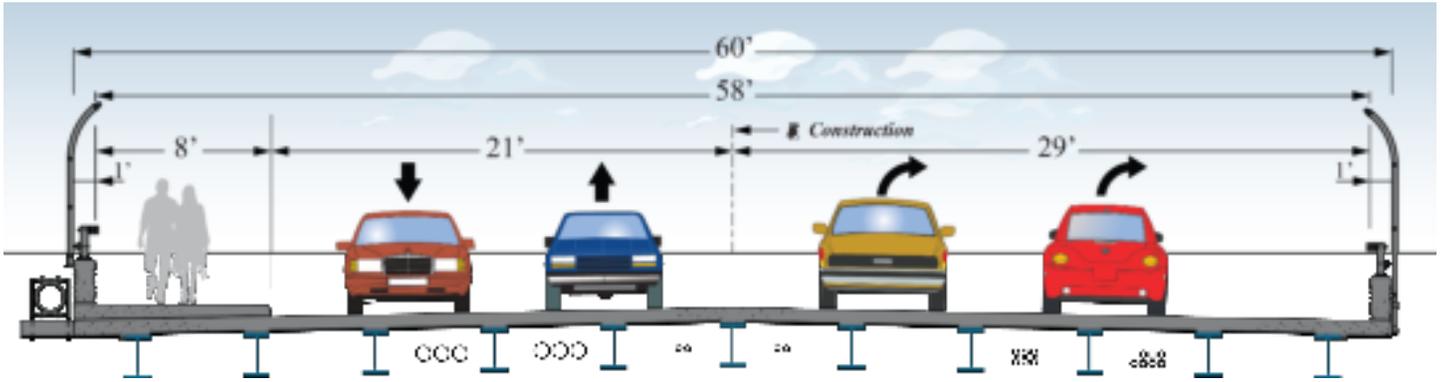


Figure 4.3.1-4 7th Street

E. Broad Street – designed as an Other Principal Arterial (VDOT GS-5) with a design speed of 30 MPH using TC-5.11U maximum superelevation 4%, with Curb and Gutter and designed for a WB-67 vehicle. West of the bridge over I-95, E. Broad Street will have two 11-foot lanes in each direction with a variable width auxiliary lane right, a 4-foot raised concrete median, Richmond curb, and 7-foot brick sidewalk on both sides of the roadway. East of the bridge over I-95, E. Broad Street will have two 10.5-foot lanes in each direction with a variable width auxiliary lane left, Richmond curb and 8-foot brick sidewalk left, and Richmond curb and 6-foot brick sidewalk right.

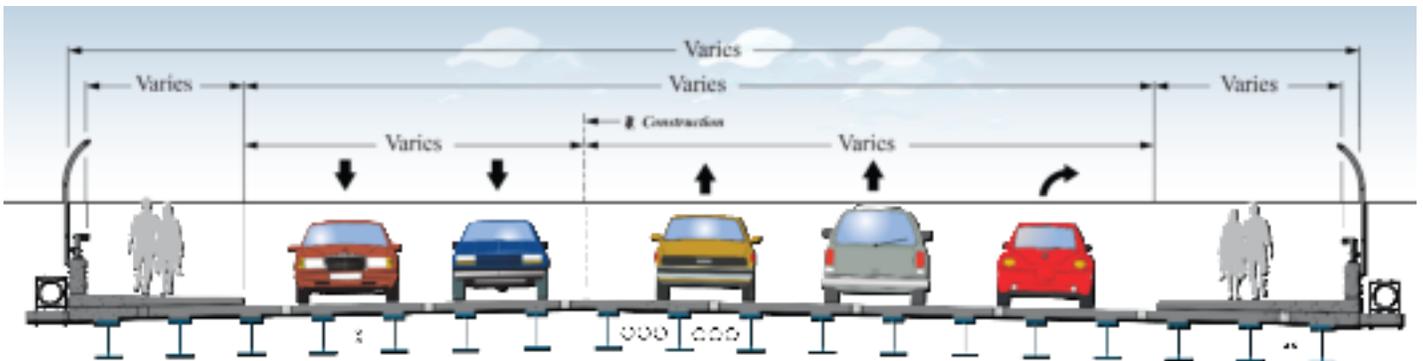


Figure 4.3.1-5 E. Broad Street

(b) horizontal alignments

Our Team does not propose to modify the existing horizontal roadway geometry along 1st Street, 4th Street, 5th Street, 7th Street, or E. Broad Street.

(c) maximum grade for all segments and connectors

Our Team does not propose to modify the existing vertical roadway geometry along 1st Street, 4th Street, N 5th Street, 7th Street, or E. Broad Street. Table 4.3.1-1 details maximum roadway grades.

Roadway	Approximate Maximum Grade
1 st Street	1.03 %
4 th Street	3.01 %
5 th Street	1.58 %
7 th Street	3.90 %
E. Broad Street	8.85 %

Table 4.3.1-1

(d) typical sections of the roadway segments to include ramps, retaining walls and bridge structures

See typical sections in 11”x17” plan set in Volume II.

(e) proposed Right of Way limits (i.e. shown as an overlay of the Offeror’s proposed Right of Way limits and VDOT’s RFP Conceptual Right of Way limits, highlighting the differences between the two)





See 2-layer PDFs for proposed Right of Way, Temporary and Permanent Easement limits. Our Team does not propose a change in the limits from those proposed in VDOT's Conceptual Plans in Volume II. We propose an additional Permanent Utility Easement for Dominion Energy on the Sixth Mount Zion Baptist Church property at the southeast end of the 1st Street bridge, between Duval Street and I-95.

(f) proposed utility impacts

There are existing utilities present at each bridge location that will necessitate in-depth coordination to alleviate or resolve any conflicts. Existing water system facilities will need to be relocated at each bridge site, including 12-inch water mains on the 1st, 5th, 7th, and E. Broad Street bridges, with the E. Broad Street location being critical in nature. Other impacts range from simply capping inactive gas mains at a few bridge sites to relocating thirteen Verizon-owned conduits that are made of asbestos cement at both 1st and 7th Street bridges. There are also facilities owned by Dominion Energy and other utility companies that will involve relocation at multiple bridges. More information about these potential conflicts and our Team's approach to Utility Coordination can be found in Section 4.4.2.

(g) other key Project features - Stormwater Management Approach

The proposed drainage improvements associated with the bridge replacements will be designed in accordance with the VDOT Drainage Manual, BMP Standards and Specifications, Virginia Erosion and Sediment Control Handbook, Virginia Erosion and Sediment Control Law and Regulations (9VAC25-840), the Virginia Stormwater Management Program Regulations (9VAC25-870), VDOT Illicit Discharge Detection and Elimination Program Manual, all applicable FHWA Hydraulic Standards, and all other standards and references provided in the technical requirements.

All existing and proposed drainage facilities within the Project limits that are disturbed or extended as part of the Project are considered functional elements of the final design and shall be rendered in a serviceable condition. A spread analysis will be performed for all existing and proposed inlets that are considered functional elements of the final design. The maximum design spread width and design storm requirements shall be in accordance with Table 9-1 of the VDOT Drainage Manual. Existing inlets that do not meet these criteria have been replaced, or additional inlets have been added.

Stormwater management for the Project will meet Technical Criteria Part IIB of the Virginia DEQ regulations and Virginia State Code 9VAC25-870-66. All outfalls are assumed to be manmade and will be analyzed based on the 10-year design storm. At locations where the 10-year flow rate increases in the post-development condition, it must be attenuated to the pre-development 10-year flow rate by the use of SWM facilities. Two SWM facilities are proposed with the 5th Street improvements. All outfalls drain into a combined sewer system and therefore are exempt from water quality requirements of the Virginia Stormwater Management Program per Virginia State Code 62.1-44.15:34 Part C.

Standard Combination Underdrains (CD-2) are required at the bridge approaches. CD-2 will discharge in accordance with the 2020 VDOT Road and Bridge Standards. Outfalls will include VDOT Standard EW-12, existing and proposed inlets and access structures, and points of discharge through the proposed barrier walls adjacent to the bridges.

This project will be exempt from providing drainage structures at the end of bridge approach slabs as typically required in section 9.4.5.1.5 of the VDOT Drainage Manual. Drainage structures at these locations are not required to be replaced if there are no changes in the existing directional flow of water from the bridges, and curbing is provided from the bridge to a drainage structure. As such, inlets that will be impacted by the reconstruction of the approach slab at the 1st Street and 7th Street have been shifted downstream along the existing curb line to facilitate the new approach slab.





4.3.2 CONCEPTUAL STRUCTURAL PLANS

The proposed structural improvements associated with this project will consist primarily of complete superstructure replacements and modifications/rehabilitation/repair to the substructures. The new structural elements will be designed in accordance with AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications (IIM-S&B-80) and the Additional Foundation Criteria, shown in RFP Attachment 2.3. Existing substructure elements that remain in service will be evaluated in accordance with the provisions for loading, strength, serviceability, and stress in the AASHTO bridge design specifications in effect when the bridge was built, as shown in Table 4.3.2-1. Preliminary analyses indicate that the existing substructure units can accommodate the new loading without modification beyond those required for repair and rehabilitation.

The proposed structures will utilize low permeability concrete in accordance with Section 217 of the 2020 VDOT Road and Bridge Specifications. All reinforcing steel will be deformed and shall conform to ASTM A615, Grade 60, except for reinforcing steels noted as CRR (corrosion-resistant reinforcement). The proposed structures will utilize CRR in accordance with IIM-S&B-81. Epoxy-coated reinforcing steel (including chairs) will not be used. Long-term maintenance costs are being reduced by utilizing tools from VDOT’s jointless technology suite. Micro-abutment details similar to the one shown below are proposed which will avoid allowing water to collect on the new beams and bearings.

Structure	Design Year	Structural Element
1 st Street	1961	Abutment A, Pier 1
	1953	All other substructures
4 th Street	1961	All substructures
5 th Street	1953	All substructures
7 th Street	1961	Abutment A, Pier 4, Abutment B
	1953	All other substructures
E. Broad Street	1953	Pier, Abutment B
	1973	Abutment A

Table 4.3.2-1

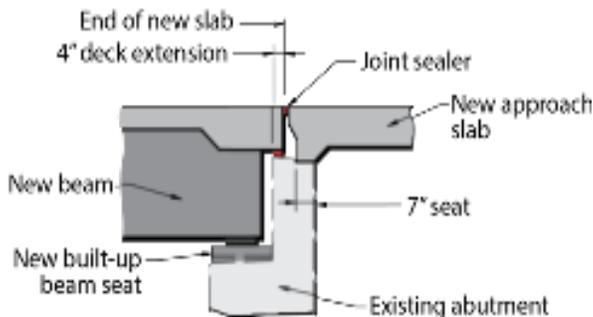


Figure 4.3.2-1

For structural steel alternatives, the material will be weathering steel and follow the guidance in the Federal Highway Administration Technical Advisory T5140.22 (October 3, 1989), “Uncoated Weathering Steel in Structures.” The yield strength of steel will not be less than 50 ksi. The sacrificial thickness of 1/16” is included on all exposed surfaces of the steel plate girders with the fascia beams and bottom flanges of all interior beams being painted.

2 Bridge Project. Continuous and safe access for pedestrian and bicycle traffic will be provided between the construction limits at all structures except the 5th Street bridge, including during weekend closures of E. Broad Street.

For all superstructure designs where structural steel is used, a Bridge Strike Mitigation System (BSMS) will be provided in each span crossing active traffic where a minimum vertical clearance of 16’-0” cannot be provided. The BSMS will be provided between the fascia beam and the first interior beam in the first girder bay. “First girder bay” is defined as the bay that the normal traffic flow will encounter first. The BSMS will not transfer the load to the

Plan Submittal will be in accordance with IIM-S&B-19 as a Tier

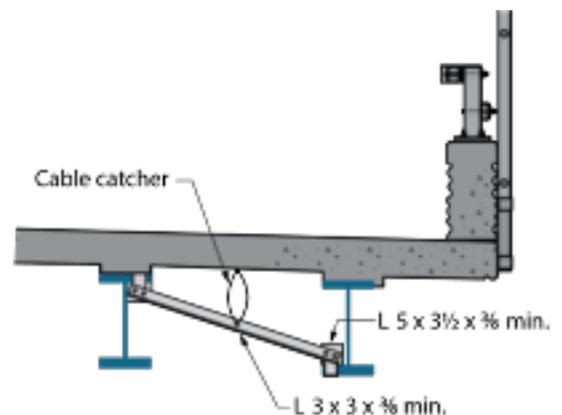


Figure 4.3.2-2





bottom flange of any beam beyond the fascia beam. Welding will not be used to connect the angle to the girder flange or the angle to the strut. A minimum of 2- 7/8" ASTM A325 bolts in each connection will be provided (see Figure 4.3.2-2).

Along the length of the fascia girder, the strut spacing along the length of the beam shall be no greater than 6'-0" over any active travel lane. Four (4) additional angle struts per bridge for each lane direction will be provided to VDOT for storage at a location designated by the District for rapid response in the event of a future bridge strike. Struts will be hot-dipped galvanized in accordance with Section 233 of the VDOT 2020 Road and Bridge Specifications. Additional strut pieces will be individually marked with paint or other durable material to clearly indicate which structure they fit. No element of the BSMS will be permitted to separate and fall into traffic after failure. The strut will be secured at its mid-length by a cable to an eye-bolt mounted in the bottom of the deck slab.

All bridges will use VDOT standard railing type CPSR-1 with aesthetic treatment on both sides per the technical requirements. The steel railing will be galvanized and powder-coated (Black, Federal Color No. 595-25045) in accordance with the Special Provision for Powder Coating included in the RFP Information Package.

At each structure, a pedestrian fence will be provided in accordance with VDOT Manual of the Structure and Bridge Division, Part 2 - Chapter 30. VDOT Standard BPF-5 (Type C) pedestrian fence will be used adjacent to sidewalks, and VDOT Standard BPF-4 (Type C) will be used where sidewalks are not present. The pedestrian fencing will be black, vinyl-coated. Standard Details for fencing will be modified as necessary to accommodate signs and architectural treatment.

Because of the limited depth of the superstructures and the fact that buried approach slabs would interfere with the utilities passing through the backwall, the deck slab extension abutment type required based on VDOT abutment type selection criteria is not feasible for these structures. In lieu of this, a Virginia Micro Abutment has been selected for all bridges, which will allow for at grade full-width approach slabs with room for utilities to pass through the back walls. Special Design Barrier will be supported on moment slab in areas beyond the limits of the approach slabs.

The Design Waivers and Design Exceptions required for the project are shown in Table 4.3.2-2 below. It should be noted that all bridges will meet the minimum vertical clearance of 15'-0" as designated by their corresponding Vertical Clearance Design Exception.

Design Waivers and Design Exceptions				
Structure	Deck Overhang Width Design Waiver	Span to Depth Ratio Design Waiver	Waterline Support Blister Design Wavier	Vertical Clearance Design Exception
1 st Street	No. 1	N/A	No. 8	No. 1
4 th Street	No. 2	N/A	N/A	No. 2
5 th Street	No. 3	N/A	No. 9	No. 3
7 th Street	No. 4	N/A	No. 10	No. 4
E. Broad Street	No. 5	No. 6	No. 11	No. 5

Table 4.3.2-2

A summary of the proposed bridges is shown in Table 4.3.2-3 on the following page. More details of the proposed bridges can be found in the structural plans attached in Volume II of the Technical Proposal.





Structure	Bridge Width	# of Spans and Max Span Length	Superstructure	Substructure
1 st Street	58'-0" out-to-out*	5 span continuous / 61'-6 ¼"	<ul style="list-style-type: none"> • Steel Plate Girder • 7'-5 ½" Max Girder Spacing • Elastomeric Bearing Pads • New Full Width Approach Slabs • 8'-0" wide sidewalks (both sides) • CRR Class I reinforcement 	<ul style="list-style-type: none"> • VA Micro Abutments • RFP Required Repairs • Reconstructed Beam Seats
4 th Street	74'-0" out-to-out	2 span continuous / 87'-0"	<ul style="list-style-type: none"> • Steel Plate Girder • 4'-0 ¾" Max Girder Spacing • Elastomeric Bearing Pads • New Full Width Approach Slabs • 6'-6" wide sidewalks (both sides) • CRR Class II reinforcement 	<ul style="list-style-type: none"> • VA Micro Abutments • RFP Required Repairs • Reconstructed Beam Seats
5 th Street	57'-7" out-to-out*	4 span continuous / 54'-9"	<ul style="list-style-type: none"> • Steel Plate Girder • 7'-4 ½" Max Girder Spacing • Elastomeric Bearing Pads • New Full Width Approach Slabs • No sidewalks • CRR Class III reinforcement 	<ul style="list-style-type: none"> • VA Micro Abutments • RFP Required Repairs • Reconstructed Beam Seats
7 th Street	60'-0" out-to-out*	5 span continuous / 59'-0"	<ul style="list-style-type: none"> • Steel Plate Girder • 5'-5" Max Girder Spacing • Elastomeric Bearing Pads • New Full Width Approach Slabs • 7'-0" wide sidewalk (west side) • CRR Class II reinforcement 	<ul style="list-style-type: none"> • VA Micro Abutments • RFP Required Repairs • Reconstructed Beam Seats
E. Broad Street	Varies out-to-out*	2 simple spans / 69'-11 ½"	<ul style="list-style-type: none"> • Precast Concrete Units • 4'-6 ¼" Max Girder Spacing • Elastomeric Bearing Pads • New Precast Approach Slabs • Variable sidewalk width (both sides) • CRR Class III reinforcement • Link slab in deck over pier 	<ul style="list-style-type: none"> • VA Micro Abutments • RFP Required Repairs • Reconstructed Beam Seats

* Does not include waterline support blister

Table 4.3.2-3 Summary of Proposed Bridges



4.4 Project Approach





4.4 PROJECT APPROACH

4.4.1 ENVIRONMENTAL MANAGEMENT

AWC is committed to completing the Project in a manner that avoids and minimizes impacts to the environment; ensures full compliance with applicable laws, regulations, and the Project's Technical Requirements and environmental commitments. The proposed design and construction approach minimizes impacts to environmental resources and streamlines the permitting process. We will implement the following environmental management strategies throughout the project:

- Identify and evaluate environmental and cultural resources that occur within the project limits
- Identify potential critical issues early and re-assess throughout design and construction to manage regulated materials such as asbestos-containing materials and lead-based coatings, eliminate/reduce project impacts, and early planning of mitigation measures
- Avoid, minimize, and mitigate environmental and cultural impacts to the greatest extent practicable
- Partner with regulatory agencies to secure permits without delay and facilitate reasonable permit conditions consistent with construction means and methods
- Establish milestone reviews and technical submissions to/from transportation and resource agencies and involved third-party stakeholders
- Incorporate environmental commitments within design processes, plan preparation, preconstruction planning, and construction activities to ensure activities are conducted responsibly and in full conformance with the project permits, approvals, and commitments
- Maintain an environmental compliance program, including standards, procedures, and audits by conducting staff training, site inspections, and records maintenance
- Create inter-disciplinary review teams to ensure management effectiveness using tight quality controls and rapid response to emerging project challenges

Immediately upon NTP, coordination efforts with affected agencies, including regulatory agencies, utilities, transportation agencies, and others, will commence. The Team is fully prepared to meet or exceed the technical requirements, adhere to applicable regulations and National Environmental Policy Act (NEPA) commitments, minimize environmental impacts, incorporate sustainability, manage environmental risk, and avoid adverse schedule and cost impacts.

Integrating environmental activities is a primary component founded on principles and objectives described in Table 4.4.1-1. AWC has reviewed and identified all the environmental commitments, challenges, and constraints. We developed strategies to avoid and minimize impacts, manage regulated materials, comply with applicable VDOT specifications and special provisions, and applicable environmental, health, and safety regulations.

The main goal of our Environmental Manager is to ensure all parties are aware of project constraints, schedule limitations and to assure constructability. Our fully integrated environmental approach ensures:

- Necessary permits are identified at the beginning of the Project;
- Environmental commitments and constraints are identified and accounted for;
- Regulated materials are adequately managed;
- Stakeholder concerns are addressed;
- Adequate timelines are established for environmental permits; and
- Construction is completed in accordance with RFP, permits, NEPA commitments, and Project specifications.





Planned Efforts During Design and Construction to Avoid/Minimize Impacts to Environmental and Cultural Resources

The primary objective of the Environmental Manager during design is avoidance and minimization of impacts and minimizing the risk of schedule delays. Efforts are focused on working with design and construction staff to avoid environmentally sensitive areas. Once plans are approved and permits obtained, the Environmental Manager ensures construction staff understands the Project constraints in order to eliminate environmental impacts. Our environmental professionals work closely with field staff to address construction monitoring of the permit and environmental commitments in the field. Our planned efforts during design and construction to avoid/minimize impacts to environmental resources are summarized in Table 4.4.1-1.

Table 4.4.1-1 Planned Environmental Efforts During Design and Construction

Design Phase	Construction Phase
<p>1. “Over The Shoulder” Interaction with engineers and Environmental Manager to:</p> <ul style="list-style-type: none"> • Avoid/minimize impacts within the Project area. • Include stakeholder elements. • Resolve design issues/concerns. <p>2. Technical Design Meetings</p> <ul style="list-style-type: none"> • Comment on design, schedules, and environmental issues/concerns • Provide technical input and recommendations related to permit requirements and environmental commitments. • Identify commitments to remain in compliance, avoid conflicts between design and construction <p>3. Internal Reviews</p> <ul style="list-style-type: none"> • Ensure plans and design revisions are in compliance with permits, approvals and commitments. <p>4. Permitting/Approval Process</p> <ul style="list-style-type: none"> • Coordination with design and Construction staff • Account for utility relocations • Coordination with VDOT, City of Richmond, and other regulatory agencies • Integrate with the Project Schedule 	<p>1. Constraints And Commitments Training</p> <ul style="list-style-type: none"> • Ensure construction team understands constraints and locations <p>2. Erosion & Sediment (E&S) Compliance Checks</p> <ul style="list-style-type: none"> • Identify areas where additional attention may be required <p>3. Environmental Compliance Discussions</p> <ul style="list-style-type: none"> • Review environmentally sensitive areas included in the next month’s work <p>4. Construction Field Revision Reviews</p> <ul style="list-style-type: none"> • Limit risks and potential for non-compliance for environmental items <p>5. On-Call Assistance After Storm Events</p> <ul style="list-style-type: none"> • Mitigate for potential delays in construction <p>6. Compliance Assurance</p> <ul style="list-style-type: none"> • Perform regular inspections and monitoring • Ensure compliance with self-reporting requirements <p>7. Permit/Project Closeout</p> <ul style="list-style-type: none"> • Complete final inspection to confirm stabilization of project rating limits • Provide appropriate documentation to VDOT, City of Richmond, and regulatory agencies

During design, the Design-Builder will develop a phased erosion and sediment control (ESC) plan for all phases of construction in accordance with the Virginia Department of Environmental Quality (VDEQ), the Virginia Erosion, and Sediment Control Regulations (9VAC25-840), and the Virginia Erosion and Sediment Control Handbook. A City of Richmond Land Disturbing Permit (LDIS) will be prepared and submitted for approval to the City of Richmond Department of Public Utilities, Stormwater Utility, prior to any land-disturbing activities. The ESC plan will prevent sediment from leaving the project limits during all phases of construction. The plan will also include interim controls to ensure that there are no deficiencies when transitioning between phases. Environmentally sensitive areas adjacent to the project will be identified early in design, and the Design-Builder



will implement precautionary ESC practices to ensure that there are no impacts to these areas.

A stormwater pollution prevention plan (SWPPP) will be prepared and will include the ESC Plan and Narrative, a Pollution Prevention (P2) Plan, and a post-construction Stormwater Management (SWM) Plan. The SWPPP will meet all the applicable requirements of the Virginia Erosion and Sediment Control Law and Regulations, the Virginia Stormwater Management Act (VSMA), the Virginia Stormwater Management Program (VSMP) Regulations, General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Construction Activities (Construction General Permit). Table 4.4.1-2 identifies our Team’s solutions to address and limit risks in recognized environmental conditions and areas of concern to ensure that the Project complies with the commitments made.

Table 4.4.1-2 Environmental and Cultural Resources and Management Approach

Environmental and Cultural Resources	Requirements	Method to Limit Risk
EQ-103 & RFP Commitments Not noted below	<ul style="list-style-type: none"> Notify VDOT if necessary, easements located outside of ROW beyond conceptual plan, cultural resources, T&E, or other surveys may be required 	<ul style="list-style-type: none"> Utilize ECM, ECTD, over the shoulder, and weekly design reviews to maximize avoidance and minimization efforts
Threatened and Endangered Species (T&E species)	<ul style="list-style-type: none"> VDOT’s preliminary database review concluded no effect on threatened and endangered (T&E) species 	<ul style="list-style-type: none"> The Team will conduct a final review of potential T&E species through the Virginia Department of Conservation and Recreation’s Natural Heritage Program, Virginia Department of Game and Inland Fisheries (DGIF) Fish and Wildlife Information Service database, and the US Fish and Wildlife Service’s (USFWS) ECOS and Information, Planning, and Conservation System (IPaC) prior to construction to confirm no effects to T&E species and that no new special status species have been identified within the Project Areas. The AW/WSP Team will copy the VDOT District Environmental Manager on any submittals requesting concurrence from the resource agencies on effect determinations of federally-listed species.
Noise	<ul style="list-style-type: none"> The Noise Scoping Decision indicated this is a Type III project and that a Noise study is not required. 	<ul style="list-style-type: none"> The final project plans will not result in a requirement for noise analysis.
Wetlands/ Streams/WQ Permitting	<ul style="list-style-type: none"> There are no aquatic resources regulated under the Clean Water Act (CWA) within the Project Areas. 	<ul style="list-style-type: none"> No Section 401/404 CWA permits are required. No purchase of Nutrient Credits and no associated VPDES Permits are required for the project.



Environmental and Cultural Resources	Requirements	Method to Limit Risk
<p>Environmental Commitments (EQ-200, EQ-201 and EQ-103, NEPA Programmatic Categorical Exclusions)</p>	<ul style="list-style-type: none"> ■ Asbestos-containing materials and trace materials. ■ Maintain pedestrian access across the bridges during construction. ■ Historical Marker (SA 66-Execution of Gabriel) at E. Broad ST (RTE 250) must be removed, stored, and replaced during project. ■ In-kind replacement of the existing brick sidewalk and granite curbing within the construction area on the east and west sides of the E. Broad ST Bridge No. 21569 over I-95 in the City of Richmond. ■ E. Broad Street Bridge – (1) Limitation of construction activities to a maximum depth below ground surface to ensure protection of an unmarked cemetery (Archaeological Site 44HE1089) (2) limitation of operations to protect an Environmental Avoidance Area outside the project limits, and (3) erecting/installing/maintaining safety fence during the construction phase of the project. ■ The FHWA has made a de minimis impact finding for the Temporary Construction Easements for the North 1st Street bridge over I-95 & I-64 for the following 4(f) Resources: <ul style="list-style-type: none"> • Jackson Ward Historic District (DHR ID 123-0237) Acres 0.009 - de minimis • Franciscan Convent (DHR ID 127-0237-0612) Acres 0.011 - de minimis 	<ul style="list-style-type: none"> ■ See Regulated Materials below ■ Construction phasing and MOT plans provide for pedestrian access. ■ Management of the historical marker will be completed in accordance with the RFP and Special Provision. ■ The existing granite curbing will be salvaged and reused to the greatest extent possible. If necessary, curbing and brick sidewalk will be replaced in-kind matching color, size, material, design, and pattern. Work will be completed in accordance with Special Provision. ■ The depth limits on construction will be maintained and carefully monitored. Work in this area will be coordinated with the VDOT Archeologist. The Environmental Avoidance Area has been incorporated into the construction plans and will be demarcated by an orange safety fence. Work will be completed in accordance with Special Provision. ■ The final design plans will reflect these Temporary Construction Easements. The construction easements will be surveyed, reviewed by the Design, Construction, and Environmental Managers, demarcated with tape or construction fencing prior to any ground disturbance.
<p>Regulated Materials</p>	<ul style="list-style-type: none"> ■ All structures have been inspected by VDOT for asbestos containing materials (ACM). ACM found at each structure. The existing bridge structures are designated as a Type B in accordance with Section 411 of the 2020 VDOT Road and Bridge Specifications. 	<ul style="list-style-type: none"> ■ Work will be completed in accordance with Special Provision. ■ Type B materials will be managed in accordance with VDOT Specification 411



Schedule Integration

Although no environmental permits (excluding right of entry and land use permits) are required for the project, there are several regulatory approvals, notifications, and/or coordination required to implement various construction elements, including the EQ-103 commitments and abatement of ACM. These required approvals, notifications, and coordination efforts have been realistically incorporated into the project schedule as hold points. The Project Design-Build and Environmental Managers are responsible for these requirements.

4.4.2 UTILITIES

One of our Team's top priorities for this project is associated with utility coordination and relocation activities. We plan to minimize conflicts and risk by executing an active coordination program as detailed below and highlighted as follows:

- We will identify design changes or implement protective measures to mitigate conflicts and minimize relocations.
- We will work as a Team to integrate any necessary relocations with the sequence of construction to provide efficiency between the design and construction process.
- We will identify constructability issues early in the design process to avoid secondary relocations and minimize project cost overruns and schedule delays.

(a) Utilities Approach

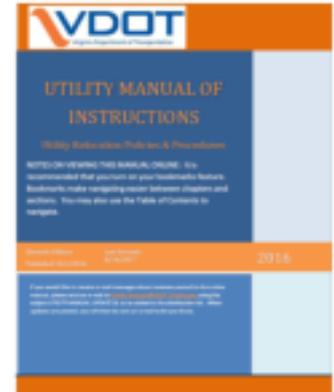
Our Team's design approach strives to limit impacts to utilities and maximize benefits for the Project and VDOT. Significant efforts have been expended already by the Team relative to evaluating the proposed improvements and coordinating with utility companies, both within and adjacent to the Project limits. As summarized in Table 4.4.2-1 below, we contacted sixteen (16) utility companies on numerous instances through phone calls, virtual meetings, and emails as part of this pursuit over the course of the RFP stage. Various existing facility information and pending improvement plans were received from several utilities and analyzed for resolution with the intended design.

Utility Owner	Virtual Meeting / Phone Call Dates	Email Dates
AT&T	6/3/21	5/19/21, 6/14/21, 7/6/21, 7/8/21
City of Richmond Gas	5/5/21	4/30/21, 5/3/21
City of Richmond Sewer	5/4/21	4/30/21, 5/5/21
City of Richmond Water	5/6/21	4/30/21, 6/25/21
Comcast	5/12/21	4/23/21, 4/26/21, 4/30/21, 5/5/21, 5/12/21, 5/19/21
Cox		4/27/21
Crown Castle (Lighttower, Sidera Fiber)	4/27/21	4/23/21, 4/30/21, 5/6/21
Dominion Energy		4/30/21
Lumen (Level 3)		6/11/21, 6/14/21
Segra (Lumos)		4/27/21
Summit IG	6/18/21	6/14/21, 6/17/21
Verizon	4/28/21, 5/13/21, 6/17/21	4/23/21, 4/30/21, 6/11/21
Verizon Business	6/11/21, 6/17/21	6/11/21, 6/14/21, 6/17/21
Windstream (Cavalier, KDL)	4/27/21	4/23/21, 4/30/21, 5/6/21
Zayo	6/3/21	4/23/21, 6/3/21, 6/4/21

Table 4.4.2-1 Summary of Contact with Utility Companies



We reviewed the RFP plans in extensive detail and, with the exception of Dominion Energy, discussed the potential conflicts at considerable length with each utility company during the course of the aforementioned conversations. Based on direction from VDOT, our coordination with Dominion Energy was limited to a single meeting, along with the other shortlisted teams, for follow-up information provided via Addendum #3. However, having established relationships with the utility representatives, including those involved with other recent projects in the area, will allow for a smooth transition after NTP to obtain the required documentation for the Project, such as utility agreements and relocation plans.



With our Team’s past design-build experience, we have first-hand knowledge of the importance of avoiding utility conflicts and subsequent relocations. Project impacts due to utility conflicts, if unforeseen, can have a negative effect on Project schedule and cost. To avoid such detrimental scenarios, we will carry over our substantial activities from the proposal stage into the design phase and through construction until the Project is complete in accordance with VDOT’s Utility Manual of Instructions.

We will re-engage with the utility owner representatives to establish clear lines of communication. We will also work continually to limit relocations through design adjustments or arrange construction provisions in those instances where conflicts cannot be avoided. Upon project NTP, our Lead Utility Coordination Manager, Sam Styers, PE, SE, will commence and oversee activities such as:

- Attend a Utility Kickoff meeting with VDOT to discuss project requirements.
- Administer a Preliminary Utility Review meeting with all utility owners.
- Review updated utility designations and test hole results.
- Hold UFI with each utility to confirm the identification of existing facilities and conduct recurrent, in-depth meetings.
- Evaluate existing utility easements, identify the need for proposed easements, and coordinate required easements (replacement or VDOT) with the Right-of-Way Manager.
- Identify the utility relocations that most directly affect the project schedule and work diligently to confirm right-of-way needs (if any), and complete P&E reviews promptly for those utilities.
- Prepare a Preliminary Utility Status Report within 120 days of NTP.
- Prepare UT-9 forms and perform a thorough review of each utility’s statutory, compensable or prior rights to accurately establish pro-rata cost responsibility.
- Work with each utility owner to develop relocation schedules and coordinate the information with other disciplines and the overall Project schedule.
- Review available As-Built plans provided by the utility companies.
- Record and update the status of utility relocations in RUMS.
- Prepare utility agreements with the utility companies.
- Consistent coordination with VDOT’s Regional and Design-Build representatives.
- Submit relocation plans and estimates to VDOT for review, and upon approval, notify each utility in writing so that relocations can commence.
- Incorporate needed in-plan utility relocations into the design plans for approval.

Utility Status Report

UTILITY OWNER	FACILITY TYPE	MASTER AGREEMENT SIGNED	RELOCATION PLAN APPROVED	ESTIMATE APPROVED	ESTIMATED DURATION (days)
Appalachian Power Co.	Electric/Power	12/7/2015	4/4/2016	4/4/2016	30
Verizon Virginia	Telecom	3/23/2016	4/4/2016	4/4/2016	90
Mid-Atlantic Broadband	Telecom	11/13/2015	1/6/2016	1/6/2016	5
Comcast Cable	Telecom	12/15/2015	11/19/2015	11/19/2015	45
Columbia Gas of Va	Gas	3/16/2016	9/12/2016	9/12/2016	60

Figure 4.4.2-1 Example tabular excerpt from a Utility Status Report



Our Utility staff also will stay involved during construction to coordinate the timely and successful completion of the relocation work with AWC and utility companies. In the event that unforeseen utility conflicts arise, the Utility Manager will promptly consult with the utility owner and construction staff to ascertain details about the conflict and develop a strategy to accommodate a relocation or avoid it altogether.

(b) Potential Conflicts and Solutions

Although there is significant construction planned at five bridge locations, a few of the sites have relatively few impacts on the proposed roadway and bridge improvements. At this stage of project development, we have identified existing aerial and buried utilities that potentially conflict with the Project, of which the most prominent areas likely in need of relocations are at the 1st Street and 7th Street bridges. Tables 4.4.2-2 through 4.4.2-6 below present a list of these potential conflicts broken down by each bridge location. In addition, our Volume II plans depict preliminary relocation routes for those facilities identified as in conflict at this stage of the Project.

Table 4.4.2-2 Potential Utility Conflicts – 1st Street Bridge

Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Underground Communication			
Verizon (manhole)	STA 13+01	Proposed Bridge Approach	Adjust existing frame & cover
Verizon* (2 comm. ducts – 13 conduits)	STA 12+83 to STA 16+00	Bridge Reconstruction	Relocate conduits on bridge
Underground Electric			
Dominion Energy (electric line)	STA 13+30 to STA 13+47	Proposed work in front of abutment	Avoid impacting or relocate
Dominion Energy (electric line)	STA 15+30 to STA 15+45	Proposed work in front of abutment	Avoid impacting or relocate
Unknown* (unknown conduit)	STA 12+83 to STA 15+62	Bridge Reconstruction	Remove any existing conduit from bridge
Gas			
Richmond City Gas (6" valve)	STA 13+34	Proposed ADA Ramp	Avoid impacting or adjust existing valve box
Richmond City Gas* (6")	STA 13+09 to STA 16+03	Bridge Reconstruction	
Water			
Richmond City Water (fire hydrant)	STA 12+31	Proposed ADA Ramp	Avoid impacting or relocate
Richmond City Water* (12")	STA 12+31 to STA 16+07	Bridge Reconstruction	Relocate water main on bridge
Overhead / Utility Poles			
Dominion Energy	STA 12+79	Proposed Sidewalk	Avoid impacting or relocate
Comcast (138 ct. fiber & trunk coax)	STA 12+79	Proposed Sidewalk	Avoid impacting or relocate
Crown Castle (144 ct. fiber)	STA 12+79	Proposed Sidewalk	Avoid impacting or relocate
Dominion Energy	STA 13+07	Proposed Guardrail	Relocate pole and overhead lines



Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Dominion Energy	STA 13+38	Proposed Guardrail	Relocate pole and overhead lines
Dominion Energy*	STA 13+63	Bridge Reconstruction	Relocate pole and overhead lines
Comcast (138 ct. fiber & trunk coax)	STA 13+63	Bridge Reconstruction	Relocate pole and overhead lines
Crown Castle (144 ct. fiber)	STA 13+63	Bridge Reconstruction	Relocate pole and overhead lines
Richmond City Streetlight* (light pole)	STA 14+67	Bridge Reconstruction	Remove from Bridge
Dominion Energy	STA 15+62	Bridge Reconstruction	Relocate pole and overhead lines
Comcast (138 ct. fiber & trunk coax)	STA 15+62	Bridge Reconstruction	Relocate pole and overhead lines
Crown Castle (144 ct. fiber)	STA 15+62	Bridge Reconstruction	Relocate pole and overhead lines
Dominion Energy	STA 16+31	Proposed ADA Ramp	Avoid impacting or relocate
Comcast (138 ct. fiber & trunk coax)	STA 16+31	Proposed ADA Ramp	Avoid impacting or relocate
Crown Castle (144 ct. fiber)	STA 16+31	Proposed ADA Ramp	Avoid impacting or relocate

*Attached to Bridge

Table 4.4.2-3 Potential Utility Conflicts – 4th Street Bridge

Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Water			
Richmond City Water (Fire Hydrant)	STA 403+90	Proposed MOT layout	Relocate out of roadway behind curb
Overhead / Utility Poles			
Richmond City Streetlight (light pole)	STA 404+44	Proposed Sidewalk	Relocate behind sidewalk
Richmond City Streetlight (light pole)	STA 404+84	Proposed Sidewalk	Relocate behind sidewalk
Richmond City Streetlight* (light pole)	STA 406+15	Bridge Reconstruction	Remove from bridge
Richmond City Streetlight (light pole)	STA 407+20	Proposed Sidewalk	Relocate behind sidewalk
Underground Electric			
Richmond City Lighting* (1 electric duct – 3 conduits)	STA 404+83 to STA 407+28	Bridge Reconstruction	Relocate conduits on bridge





*Attached to Bridge

Table 4.4.2-4 Potential Utility Conflicts – 5th Street Bridge

Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Underground Electric			
Dominion Energy (manhole)	STA 53+26	Proposed Sidewalk	Adjust manhole frame & cover
Dominion Energy* (2 electric ducts – 8 conduits)	STA 53+32 to STA 55+49	Bridge Replacement	Relocate conduits on bridge
Gas			
Richmond City Gas* (12")	STA 53+25 to STA 55+64	Bridge Reconstruction	Remove gas main from bridge
Water			
Richmond City Water* (12")	STA 53+25 to STAe 55+64	Bridge Reconstruction	Relocate water main on bridge

*Attached to Bridge

Table 4.4.2-5 Potential Utility Conflicts – 7th Street Bridge

Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Underground Communication			
Verizon (manhole)	STA 12+83	Proposed Sidewalk	Adjust existing frame & cover
Verizon (manhole)	STA 13+01	Approach slab	Adjust manhole frame & cover
Verizon* (2 comm. ducts – 13 conduits)	STA 703+00 to STA 706+00	Bridge Reconstruction	Relocate conduits on bridge
Crown Castle* (192 ct. fiber.)	STA 703+00 to STA 706+00	Bridge Reconstruction	Relocate conduits on bridge
Zayo (432 ct. fiber)	STA 702+66 to STA 702+75	Proposed Curb and Gutter	Relocate conduits (Verizon) on bridge
Windstream* (multiple fiber lines)	STA 703+00 to STA 706+00	Bridge Reconstruction	Relocate (Dominion Energy) conduits on bridge
Summit IG (432 ct. fiber)	STA 703+00 to STA 706+00	Bridge Reconstruction	Relocate conduits (Verizon) on bridge
Underground Electric			
Dominion Energy* (3 electric ducts – 6 conduits)	STA 703+00 to STA 706+00	Bridge Reconstruction	Relocate conduits on bridge
Gas			
Richmond City Gas (6")	STA 703+03 to STA 705+75	Bridge Reconstruction	Relocate gas main on bridge



Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Water			
Richmond City Water* (12")	STA 12+83 to STA 15+92	Bridge Reconstruction	Relocate water main on bridge

*Attached to Bridge

Table 4.4.2-6 Potential Utility Conflicts – E. Broad Street Bridge

Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Underground Electric			
Dominion Energy (Electric Line)	STA 803+76 to STA 804+44	Bridge Reconstruction & Grading	Avoid impacting or relocate
Dominion Energy (junction box)	STA 803+66	Proposed Sidewalk	Adjust cover
Dominion Energy (junction box)	STA 803+86	Proposed CG-12 & Sidewalk	Adjust cover
Dominion Energy (junction box)	STA 804+44	Bridge Reconstruction	Adjust cover
Dominion Energy (junction box)	STA 806+41	Proposed CG-12 & Sidewalk	Adjust cover
Dominion Energy (Electric Line)	STA 805+90 to STA 806+28	Proposed Cut	Avoid impacting or relocate
Dominion Energy (Electric Line)	STA 806+51	Proposed Traffic Signal	Avoid impacting or relocate
Richmond City Streetlight* (1 electric duct – 2 conduits)	STA 804+50 to STA 805+90	Bridge Reconstruction	Relocate conduits on bridge
Richmond City Streetlight* (1 electric duct – 2 conduits)	STA 804+52 to STA 805+92	Bridge Reconstruction	Relocate conduits on bridge
Dominion Energy* (2 electric ducts – 6 conduits)	STA 804+51 to STA 805+90	Bridge Reconstruction	Relocate conduits on bridge
Dominion Energy* (1 electric duct – 1 conduit)	STA 805+90 to STA 805+92	Bridge Reconstruction	Avoid impacting or relocate
Water			
Richmond City Water* (2 ea. - 12")	STA 804+30 to STA 806+28	Bridge Reconstruction	Relocate water mains on bridge
Overhead / Utility Poles			
Richmond City Streetlight (light pole)	STA 803+55	Proposed Sidewalk	Remove or relocate
Richmond City Streetlight (light pole)	STA 803+56	Proposed Sidewalk	Remove or relocate



Utility Owner / Description	Approximate Location	Known / Potential Conflict	Relocation Plan / Avoidance Strategy
Richmond City Streetlight* (light pole)	STA 804+98	Bridge Reconstruction	Remove from bridge
Richmond City Streetlight (light pole)	STA 806+76	Proposed Sidewalk	Remove or relocate

*Attached to Bridge

(c) Mitigation Strategy

Being well aware of impacts to project schedule and cost related to utility conflicts, the Team has successfully managed utility relocations on large interstate and urban highway projects. We will continue the detailed coordination activities initiated with the utility companies in the proposal stage and add the steps necessary to maintain open communication during design development and construction to enhance partnering. We will also give extra attention to the areas of the Project that may involve relocations of considerable length, those that have to be completed one at a time, or those that present a complex strategy for resolution.

To mitigate unidentified utilities, we will utilize an SUE subcontractor to precisely locate and designate existing utilities at the onset of design, to be promptly followed by a robust test hole program commensurate to the site conditions that is conducted to ASCE 38-02 Quality Level A standards. Utilizing the results of those efforts, in conjunction with field investigations and in-depth meetings with the utility owners, our Team will be able to minimize any unidentified utilities, particularly those that are still active.

In addition, our Team has already conducted several cross-discipline meetings as part of preparing this proposal to recognize and reduce potential conflicts. With ongoing, honest communication and attention to detail, our Team will effectively transition from approved utility P&E plans to timely relocations to achieve a successful project delivery with minimal disruption.

(d) Integration of Utilities with Project Sequencing

There are existing utilities present at each bridge location that will necessitate in-depth coordination to alleviate or resolve any conflicts. For instance, 12-inch water mains will need to be relocated on the 1st, 5th, 7th, and E. Broad Street bridges, with the E. Broad Street location being critical in nature, so ensuring that work is integrally appropriated in the work sequence and schedule is essential. Other potential impacts range from capping inactive gas mains at the 5th, 7th, and E. Broad Street bridges to likely relocating thirteen Verizon-owned conduits made of asbestos cement at both 1st and 7th Street bridges. In addition, facilities owned by Dominion Energy that likely involve relocation include poles with aerial lines at 1st Street and conduits attached to the bridge locations at 5th, 7th, and E. Broad Streets.

We have evaluated the sequence of construction to limit any downtime to existing facilities, and position proposed improvements in such a way as to reduce impacts to the existing utilities, and select relocation routes that coordinate and maximize efficiency with proposed bridge construction activities. For example, we have adjusted the MOT sequencing on 1st Street to better accommodate the utility work for two reasons:

1. Installing the replacement Verizon conduits in Stage 1 of bridgework (to allow Verizon to relocate facilities in the same stage) will simplify removal of their existing conduit in Stage 2.
2. Shifting the gas main replacement to Stage 2 will allow the work to be performed during the summer months, causing no conflict with the City's restricted timeframe.

This design approach shows we are looking at every opportunity to perform the relocations as efficiently as possible to better control the project schedule and budget.



These are just some of the actions we have already taken during the proposal stage to eliminate conflicts. We will seek additional measures to either avoid conflicts or accommodate the relocation of affected utilities. In addition, existing facilities on or adjacent to the bridges may require further investigations to confirm their location and help reduce the risk of surprises that can have schedule and cost implications.

4.4.3 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

This Team's Quality Management System Plan (QMSP) is structured to meet the contractual requirements in not only VDOT's Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects, January 2012, revised July 2018 (Minimum Requirements), but also those defined throughout the RFP Technical Requirements. The QMSP is the foundation for defining the appropriate resource levels and time commitments for the entire QA/QC staff in support of the efforts of our Team's Quality Assurance Manager (QAM), Duncan Stewart, PE, PSP, CCM, who is committed to the project on a full-time basis.

At the Project's Kick-Off meeting, the complete Design Quality Management Plan (DQMP) and the initial Construction Quality Management Plan outline the Preparatory Inspection Meetings (PIM) for all work packages, address the process for QA Auditing and Nonconforming Work Recovery Plan (AR Plan) and will provide additional details to the CQMP updating process as design work packages are developed, submitted, and Approved for Construction (AFC) work packages are released. As part of the kick-off presentation, **nine key scenarios** will be discussed to allow the entire project team to have the same understanding of quality.

Nine Quality Management Scenarios Discussed at Kick-Off:

1. Design QA/QC steps and documentation.
2. PIM meetings/procedures for VDOT buy-in on Witness and Hold Points.
3. VDOT materials testing and QA responsibilities (Table 5-21)
4. AR Plan / NCR's – Identification, documentation, tracking, audit, recovery for defective equipment and construction activity/material failures.
5. Inspection documentation approach: checklists, daily work reports, and test reports from QA, QC, and Geotechnical Engineer of Record QC.
6. Pay application review and evaluation process.
7. Buy America compliance process: advanced planning support with the builders (what we need), source of materials (C-25) evaluation, pre-supply certification (C-76), delivery reviews (materials invoices, mill certifications, certification statements as outlined in the Materials MOI, etc.).
8. Materials Notebook Program (TL-142DB/LAP): pre-delivery source of materials (C-25), approved sources/lists evaluations, delivery receipt reviews (invoices, manufacturer/supplier certifications). Considering project complexity, two example entries may be increased to demonstrate additional scenarios.
9. ProjectWise and PlanGrid Document Management System integration: administrative and read/write access privileges recommendations. Organization of pay application support documentation.

Design QA/QC Approach

Our approach to design QA/QC is based on a process of implementation which occurs consistently throughout the study, design, and production phases rather than being applied as a separate oversight activity. We complete a thorough process in accordance with VDOT's *Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects (July 2018 QA/QC Guide)* and also in accordance with WSP's Quality Control Manual, which contains standardized procedures for QC, QA, and independent quality audits. Implementing these processes and procedures across all disciplines ensures consistent



adherence to our high internal quality standards while also meeting or exceeding the quality expectations of VDOT. WSP is proud to be ISO 9001-certified. ISO 9001 Certification mandates a formal quality control program be used for all our projects. WSP implements a rigorous QA/QC program to prevent errors and omissions and provide the most value for the budget.

The key to our QA/QC process is its implementation throughout the project lifecycle, which consists of four key sections: Program Initiation, Project Planning, Project Execution, and Project Monitoring. Project Initiation, Project Planning, and Project Monitoring are Quality Assurance functions, assuring that the plan is being followed by all team members. Project Execution is the Quality Control function.

- 1. Program Initiation:** An important part of the first phase of a project is the development of a DQMP, which is an internal WSP document submitted for VDOT approval when the project is initiated. The DQMP is developed by the Design Manager with assistance from the QA/QC Manager, and it applies to all design elements regardless of type, discipline, or location. It identifies each team member's role in the planning process and their responsibility. It also defines documentation requirements and standards for reviewing and assuring quality. This is distributed to team members to maintain a consistent effort and create a culture of quality across the board.
- 2. Project Planning:** Once the Program Initiation phase is complete, individual discipline elements are defined to perform the design work. Regardless of the discipline, the steps outlined in the DQMP will be integrated into those work elements and accounted for in both the budget and schedule. This is an important step of planning for conducting the work. QA/QC is not incidental to the process. It is as important as every other step of accomplishing the work and must be treated as such. The planning process defines the QA/QC step of work in every task we do. All disciplines work together to develop tasks with the appropriate QA/QC efforts included from the very start that are appropriate for each work element.
- 3. Project Execution:** Project Execution includes technical reviews during the execution of the project. The Design Manager and discipline leads ensure each reviewer has the experience and expertise to perform reviews for each work element. Two different levels of review occur during the execution of the project and are typically tied to a specific deliverable. First, the Design Manager or QA/QC Manager reviews the submittal to ensure that all required components are included and meet the requirements of the contract. In addition, they will also ensure that all external reports and major pieces of correspondence are reviewed by a technical editor, comply with document formatting guidelines, and are correctly, accurately, and professionally completed. Second, a technical review is complete for each discipline by experienced senior people in that discipline. Each reviewer goes through an internal iterative process and must document the process through a system of checks.

CHECKS: It is essential that the design deliverables show complete information that clearly defines task requirements to avoid errors and omissions. QC includes a check of design criteria, the reasonableness of assumptions, math, and engineering computations; technical accuracy; conformance to contract documents; review of form, content, and spelling; coordination with other disciplines during design; constructability, confirmation that review comments from previous milestone submittals or inter-disciplinary reviews have been resolved; and consistency of specifications, calculations, and drawings. QC will be conducted to a level commensurate with the complexity of the design. The QC checking process will be iterative, and it involves the originator, checker, back-checker, corrector, and verifier who ultimately returns the document to the originator of the process to validate any recommended changes. The process employs a standardized system of "checks" so that each person in the process can be readily identified by the marks they make, for instance, **yellow highlight** (correct), **red comment** (incorrect), **green checkmark** ✓ (agree), and **blue circle** (addressed). After each step, the check print stamp is signed. This stamp is required on the first sheet for



drawings and on the cover sheet for calculations, specs, reports, studies, standards/guidelines, or training material.

4. **Project Monitoring:** During the execution of the project, Project Monitoring is performed to ensure the planning process is being followed and documented appropriately. This is the primary component of quality assurance. QC Managers do not necessarily perform technical reviews. Instead, the QC Manager is the final step of the process. Once the technical review is complete and documented appropriately, the QC Manager reviews all documents to ensure they have had the proper compliance and technical reviews, comments have been addressed, and the deliverable is ready to submit. This is formalized by requiring a QA/QC verification form for each submittal that is signed by the Design Manager and QA/QC Manager, indicating the process has been followed. Only then will a deliverable be submitted. The QA/QC Manager will keep these verifications on file for each deliverable. The final step of Project Monitoring is continuous improvement. The Design Manager and QC Manager will utilize lessons learned on deliverables and incorporate them as appropriate on subsequent deliverables.

Design QA/QC Plan

As the Design Manager, Rex Gilley, PE, is responsible for implementing and managing the design QA/QC program. Rex verifies conformance with the QA/QC Plan using informal observations or by conducting audits of the processes established within the QA/QC Plan, and utilizes input from our Design QA/QC Manager, John Michels, PE, SE to ensure that proper QA and QC reviews have been completed and documented before submittals being recommended for signature and formal submission to VDOT. Completion of the formal QA and QC processes are documented on checklists and forms, including signatures from all parties involved beginning with the design engineer through the QA/QC Manager. All submissions to VDOT will be accompanied by a certification that the documents have been reviewed in accordance with the QA/QC Plan. Major components of our Design QA/QC plan are detailed in the following sections.

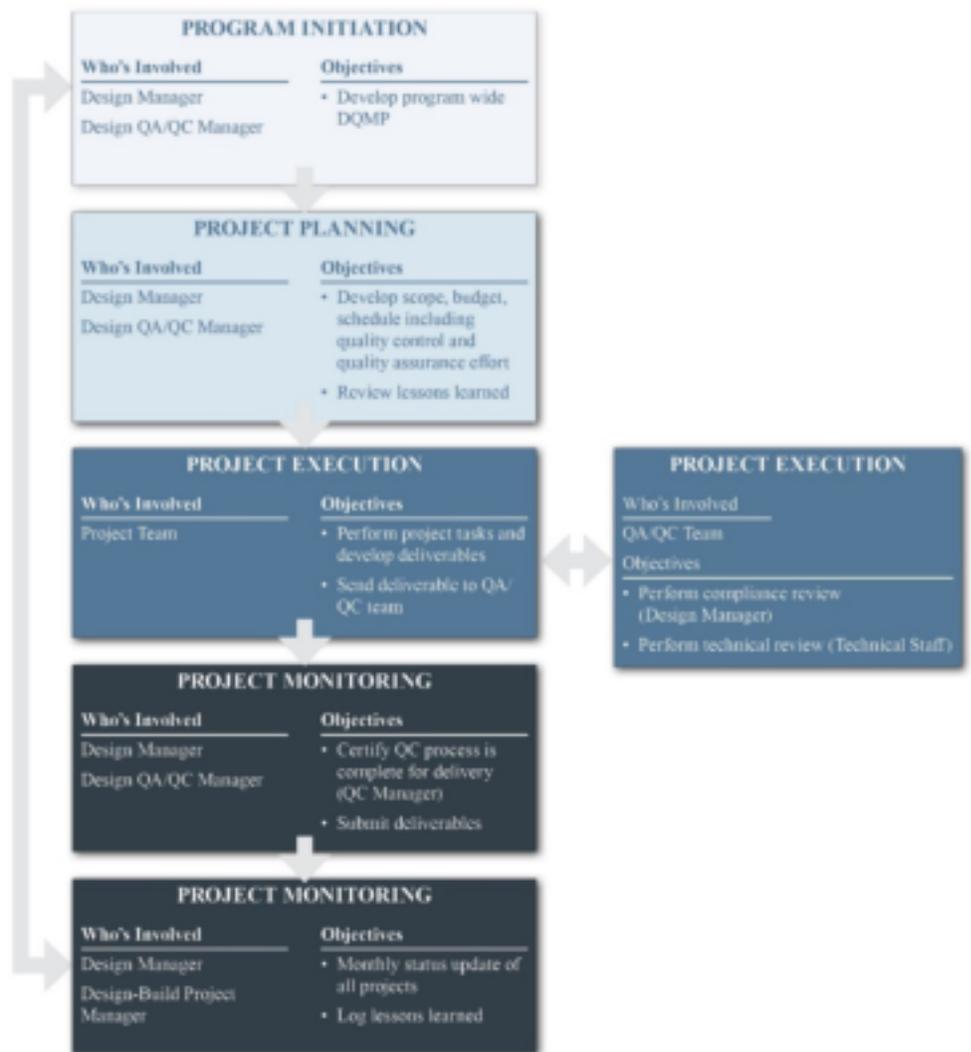


Figure 4.4.3-1 Design QA/QC plan components

Design Reviews: Design Quality Control (QC) reviews will be completed on all drawings, engineering computations, and other design-related documents for technical accuracy, conformance to contract requirements, grammar and style, and formatting.



Design QC efforts begin with the project engineer self-certifying their work and preparing it for an independent QC review by someone not involved in the day-to-day design efforts. The QC review is completed by design discipline leads and more senior staff with appropriate knowledge and experience based on the level of complexity of the design element. This effort is managed by our Design Manager, who ensures appropriately experienced staff is assigned for the QC review and that reviews have been completed at the appropriate milestone stages. The design QC process is not complete until all comments are resolved to the satisfaction of the QC reviewer, or discussions have been elevated to the Design Manager, and comments have been addressed appropriately.

Interdisciplinary Coordination: Coordination between disciplines is critical to the success of the Project and requires coordination not only from multiple design disciplines but also environmental, right-of-way, utility, and construction staff. This involvement extends beyond the design phase and through utility relocation and construction phases. Continuous interaction between all disciplines throughout the entire Project duration leads to comprehensive plans and approaches which minimize potential cost and schedule impacts.

Beyond the internal interdisciplinary coordination meetings, weekly progress meetings including design, environmental, right-of-way, utility, and construction staff are also held as necessary to maintain schedules for the overall project and for critical/long-lead elements such as environmental permits and specialty construction materials. Communication at these meetings also includes:

- Environmental regulation requirements and sensitive or restricted Project areas
- Sequencing of construction and any advance work packages which may be necessary
- Right-of-way acquisition and utility relocation sequencing; and
- Overall progress, upcoming milestone dates, and any areas where schedule adjustment needs to be investigated

In the event-specific elements have become critical, the entire Team is able to proactively identify alternate solutions which will address any concerns. These meetings continue beyond the design phase, ensuring changes in field conditions or other concerns during construction are addressed timely and without impact to the Project.

Constructability Reviews: These reviews occur during the weekly progress meetings described above and provide construction staff an opportunity to give direct feedback on the plans as they are developed, avoiding the need to implement major changes immediately prior to formal submissions. Review of design files “real-time” through computer/video displays provides opportunities to discuss challenging areas of the project and ensure that designs are safe, constructible, and consistent with the scope envisioned by the construction team. Rex and the discipline leads ensure feedback and suggestions from construction staff are incorporated in the plans as design progresses. Additionally, explanations regarding design requirements are conveyed from design staff to construction personnel to provide a comprehensive understanding of the design approach and Project requirements. In addition to these informal weekly constructability reviews, Rex and Larry Wadman (DBPM) will coordinate formal constructability reviews of the design prior to each plan submission. Comments generated from these formal reviews will be addressed by the design team or further discussed with construction staff prior to submission of any packages to VDOT for review, comment, and ultimately approval.

QA/QC of Changes During Construction: We recognize that despite a comprehensive involvement from all disciplines during design, changes following the issuance of Released for Construction plans may be necessary due to impacts of weather, availability of right-of-way, utility relocation schedules, or identification of unforeseen conditions. When necessary changes are identified, they will be reviewed in accordance with the Design QA/QC plan and follow the processes outlined above for the design phase. The nature and scope of the field change will be discussed between the Construction Manager, Matt Phillips, and Design Manager, Rex Gilley, PE, to determine if it is minor in nature and can be documented via a Request for Information (RFI) or if it is a more extensive change which will require the development of a formal plan revision. Regardless of the scope of the change, no



field adjustments will be made without the approval of the engineer and confirmation that the change is compliant with applicable standards and contract requirements. If a plan revision is necessary, our Team will coordinate with VDOT prior to making the change to establish the necessary review and approval process. Formal plan revisions will not be issued for the construction or conveyed to third-party entities until they have been reviewed and approved by VDOT.

Design QA/QC Staffing Levels

Design QA/QC staffing levels will vary throughout the design phase based on the design elements being developed; however, the involvement of Rex Gilley and John Michels will remain consistent throughout the entire design phase. Design QC involvement is anticipated to include senior staff from each design discipline as well as from subconsultant design team members. Design QC staff will be assigned for the duration of the project so that a consistent QC approach is maintained. As Design Manager, Rex will ensure that QC staffing levels are appropriate, commensurate with the amount of work being completed.

Anticipated Preparatory Inspection Meetings

- MOT & Temporary Construction Signage
- Temporary Pavement, Markings, and Markers
- Construction Survey and Layout
- E&SC and Stormwater Pollution Prevention
- Drainage
- Underdrains
- Subbase & Base Aggregates
- Milling and Overlays
- Permanent Asphalt
- Permanent Pavement Markings and Markers
- Guardrail & Terminals
- Permanent Signage – Ground Mount
- Permanent Signage – Structural Overhead
- Bridge Substructure / Rehabilitation
- Bridge Superstructure
- Bridge Deck Operations, Parapets

Construction QA/QC Approach

During the Project's design phase, the CQMP will be concurrently updated with the design work package development, environmental studies, geotechnical reports, and other design efforts as needed in accordance with the Minimum Requirements and presented to VDOT for approval with each AFC work package. Duncan and the QA inspectors from MBP will review these design efforts, estimate quantities, develop the inspection and testing plans specific to the requirements of the scope of work. Elements such as the staffing plan, inspection plan, testing plan, and inspection checklists will be updated to clearly communicate to QC, QA, and VDOT staff (collectively, the "QMS Team") the specific technical requirements for each AFC work package and to deliver the adequate resources for the work. All updates to the QMSP will be tracked as Addendum items to the plan, all subject to VDOT review and approval prior to implementation.

As our Team mobilizes for construction operations, the CQMP will be reviewed with the QMS Team to clarify expectations for quality management, documentation requirements, collaboration, and coordination efforts, risk management, and potential quality issue resolution. The initial construction kick-off meeting will also be a Preparatory Inspection Meeting (PIM), which is a project Hold Point. At the start of each PIM, Duncan will review the quality management approach specific to the scope of work. The specific staffing, inspection, testing, and checklists approved with the AFC work packages will be reviewed with the appropriate construction personnel as well as the QMS Team members who will be directly performing the quality management for that scope of work. VDOT's project staff, including the NPDES and ECI staff assigned to the Project will also be invited and engaged for their limited oversight capacities. Hold and witness points will be discussed with the entire QMS Team so that the communications plan is followed, and the appropriate staff can 'sign-off' on the inspection point. The entire AWC Team will clearly understand that as the QAM, Duncan will report directly to Larry (DBPM) and has been granted the written authority from AWC to stop work and withhold payment when circumstances necessitate such measures to achieve and maintain the required levels of quality work.



Regarding project records management, the QAM will collaborate with Matt to receive, evaluate, and process sources of materials (C-25), Buy America certifications (C-76), and relevant submittals in accordance with the Materials Manual of Instructions in advance of their manufacture and delivery. MBP will review, complete, file for the record, and provide the C-25 to VDOT for information and/or action. The VDOT PM will receive the C-25 for information for materials that the DB team is responsible for accepting. The C-25's that require VDOT action in cases where VDOT maintains the QA inspection and testing responsibilities will be flagged so that VDOT responsibilities are clear. Special consideration is necessary for the acceptance/testing of ITS components and will follow the established protocols in the Technical Requirements and as defined in the commissioning plan for inspection, integration, and testing.

MBP will utilize an AASHTO accredited materials testing lab to perform QA laboratory testing and support field testing as needed. The QA inspection and materials testing will be independent of the construction QC inspection and materials testing program and the Geotechnical Engineer of Record's QC efforts. MBP will provide verification sampling and testing independently from the QC. Duncan testing will be coordinated with QC, so this work is done 'shoulder to shoulder' by QC and QA staff. By performing these QC and QA concurrently in the field, comparisons and reconciliation can occur in real-time to minimize unnecessary deliberation, delay, rework, and/or NCR's. Non-passing tests will be immediately coordinated with field personnel for remediation and retesting and subsequently reported for the record as part of the AR Plan. When a situation cannot be immediately corrected, the AR Plan will be implemented to resolve the deficiencies in a timeframe mutually acceptable to the design-build team and the Department.

Materials documentation, test reports, completed checklists, and daily work reports (DWR) from the QA and QC inspection teams will be compiled, reviewed, and approved by Duncan daily and will be submitted into ProjectWise the Project's document management system within 24 hours of each shift being completed. Duncan will coordinate with the QCM, Jack Reid, to resolve any questions related to the QC staff's reports prior to approval.

Materials documentation will be entered into the materials notebook (TL-142DB/LAP) in accordance with the requirements of the Materials Manual of Instructions, Chapter VII: Materials Acceptance and Materials Notebook Program. At the point of entry, Duncan will backcheck the field confirmation that materials came from approved sources with approved C-25's on file and reconfirm the appropriate acceptance method and Buy America documentation has been provided following the 'audit' portion of the AR Plan. Each test report provided by the QMSP Team will also be entered into the TL-142DB/LAP after review and approval by Duncan, and he will use this step to initiate the AR Plan process as appropriate.

The QA Auditing and Nonconforming Work Recovery Plan (AR Plan) will be implemented as a continuous process throughout the project, not just during construction. If an issue is identified, it gets listed in the deficiency log. If the deficiency is not correctable using conventional means and methods, does not have a corrective action plan agreed upon by VDOT prior to the next pay application, is a safety violation, or is an environmental permit violation, it then is elevated to nonconformance status and a Nonconformance Report (NCR) is issued. Continuous monitoring and regular audits of the deficiency log may identify trends for corrective action or process improvements and trigger additional investigation or elevation of a deficiency to an NCR based on repeat performance issues. At the point an NCR is issued, Duncan will include the schedule activity IDs associated with the issue, so payment for that activity is not included in pay applications until it has been fully resolved.

Construction Quality Management Team Organization

Quality Assurance Manager – Duncan Stewart, PE, PSP, CCM (MBP) – Duncan will provide full-time on-site Quality Assurance Management during construction, reporting directly to the Design-Build Project Manager.



Duncan will have a significant planning role during the Design phase. Our Team commits to 100% full-time QAM participation from day one of construction.

QA Office Engineer/Project Records Manager (OE/PRM) – Gilbert Mbanzadore (MBP) – Gilbert will serve in a leadership position in the capacity of Office Engineer/Project Records Manager. A significant part of Duncan’s responsibility includes comprehensive project documentation control and review, much in direct collaboration with the Design Builder’s Construction Manager and corresponding on-site office staff. As OE/PRM, Gilbert will assist Duncan in providing direct daily oversight of the administration of the approved QA/QC Plan while concurrently managing QA-related document control. Additionally, Gilbert will provide certain safety controls for the QA inspection staff. For example, Gilbert will evaluate all potential confined space situations prior to entry by QA staff.

QA Inspectors – Structures & Bridges, and Roadway – (MBP) – The QA Inspectors will support both the lead QA inspector for structures and bridges and the lead QA inspector for the roadway. Initially, two (2) full-time inspectors will be employed once construction has mobilized and the workload is justified. However, in concert with both the Project Schedule, weekly work plan, and approved QA/QC Plan requirements, additional staff will be provided as needed on a part-time interim basis. Generally, the QA inspection team will be assigned to cover between one to three crews depending on the specific inspection requirements associated with the specific scope of work.

QA Technicians – Structures & Bridges, and Roadway – (MBP) – The QA technicians will support and supplement the QA inspection team’s field materials testing activities on an as-needed basis. All QA technicians will possess the required VDOT, ACI, and nuclear safety certifications for their respective roles and responsibilities.

QA Laboratory – MBP will utilize the services of an accredited laboratory for all QA lab testing requirements. All laboratory results will be compared with QC Laboratory results, and any found discrepancies/non-compliance issues will be addressed immediately by Duncan and the QA team.

Construction Quality Control Approach

AWC’s construction QC approach is based on the philosophy of **PLAN-DO-CHECK-ACT**. This **4-step** approach provides Duncan and VDOT the confidence that the work was done correctly, the inspections occurred, and proper documentation was recorded and distributed.

Step 1 – Work Plans for Definable Features: Jack will initiate and track the development of the Work Plan for every new construction activity in conjunction with the Superintendents and Project Engineers to incorporate safety and quality procedures.

- **Plan:** Evaluate the work to be done, whether across scope or for just a single day. Establish what success looks like. Identify all hazards and how you will address them.
- **Do:** Execute the plan as it was written. If circumstances change or if conditions arise that were not accounted for in the plan, stop. Re-evaluate and move ahead according to the new plan.
- **Check:** After the work is complete, evaluate the results. Did the plan work? Are there things that should be improved in the plan moving forward? Are there things from the original plan that were not covered?
- **Act:** Make adjustments and create a new plan based on the evaluation. Begin the cycle again.

Step 2 – Develop/Review Quality Checklist: The Quality Review Checklist is a comprehensive listing of all items and tasks that need to be accomplished before the work activity occurs and includes the following:

- Items to be inspected/verified;





- Hold Points where work is halted until inspections and sign-offs occur;
- Sign-off by multiple parties, including the foreman, superintendent, quality control inspector, and quality assurance inspector;
- Material Testing Requirements such as number of concrete cylinders to be made, additional concrete tests, and material certifications received.

Step 3 – Review/Utilize Operational Checklist: The operational checklist describes items that occur during the specific construction activity (i.e., concrete placing operation - method of placement, when cylinders and concrete tests occur, and vibration and its interval).

Step 4 – Utilize Post Construction Checklist: The Post Construction Checklist identifies when tests occur and when test results reports will be distributed and to the project team, QC, QA, and VDOT.

Staffing Plan - Construction Quality Control (QC)

The QC Team, led by the CM, has the training and experience required to properly execute the quality program. Our approach and commitment provide assurance to VDOT that quality will be addressed and allow the Department to minimize its oversight resources. An outline of our QC resources and responsibilities is as follows:

Construction Manager (CM) Matt Phillips, Archer Western Construction, LLC – *Design Phase: Estimated at 25% - 50%; Construction Phase: 100% from Notice to Commence Construction completion to Final Completion.* As a Key Personnel, Matt has overall responsibility for construction, safety, and the QC Program. During the Design Phase, he will focus his efforts on constructability review of the plans, planning means and methods of construction, and coordinating with the Design Team to ensure those means and methods are accommodated by the final design details. During Construction, he directs and manages day-to-day construction activities, monitors and updates the schedule, coordinates with the utility discipline and oversees the QC Program. He ensures construction is in accordance with the project requirements and will be on the Project site full-time for the duration of construction operations.

Quality Control Manager (QCM), Jack Reid, Archer Western Construction, LLC – *Construction Phase: 100% from Notice to Commence Construction completion to Final Completion.* Reporting to Matt is QCM Jack Reid, who is responsible for construction quality control and oversees quality control testing and inspection activities. Jack assigns inspectors and testing technicians for each work package and monitors reporting documentation to ensure that the work is completed per Contract requirements. Jack will assign two full-time QC inspectors – one for roadway and one for structures/bridges (to mirror the QA organization). Additional inspectors and testing technicians will be utilized when required by the schedule to ensure sufficient coverage is always provided during construction.

QC Inspectors/Testing Technicians – *Construction Phase: One full-time Senior Structure/ Bridge Inspector during bridge construction, two support Structure/Bridge Inspector during peak periods.* QC Inspectors and Testing Technicians will be utilized at ratios to support covering the volume of ongoing construction activities at any given time. These Inspectors and Testing Technicians hold applicable certifications for the materials they are inspecting and testing.

Our Team utilizes a Daily Activity Report (DAR) Form to communicate to QA, QC, and VDOT the upcoming work for the next day. Details such as scheduled MOT setups, concrete pour times, aggregate base production rates, and subcontractor activities are provided. The QC Office Engineer will also collect and review all Inspector Daily Reports (IDR's) and organize the reports for concise and timely submission to Duncan. The use of the QC Office Engineer ensures that the Inspectors are in the field, reviewing and verifying the work in place.

4.5 Construction of the Project





4.5 CONSTRUCTION OF THE PROJECT

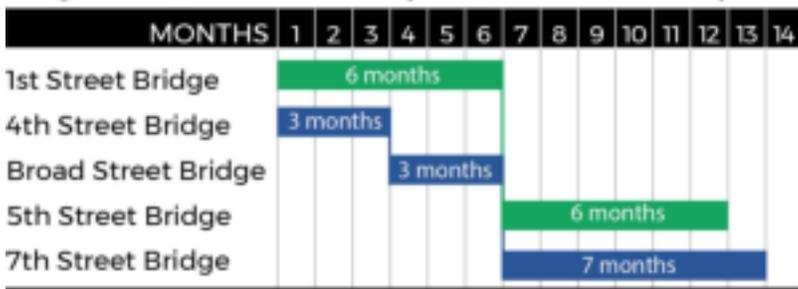
4.5.1 SEQUENCE OF CONSTRUCTION

The development of the sequence of construction for this project has been a collaborative effort between construction staff and designers responsible for TTC/MOT design, roadway design, bridge design, drainage and stormwater management design, environmental compliance, utility coordination, and design. All of these groups met on a weekly basis during the proposal development process to develop an efficient sequence of construction that upheld safety as paramount, aimed to significantly reduce impacts to the traveling public and achieved project completion by the contractual completion date.

We have enhanced our project schedule by advancing a substructure repairs package to allow construction to start before final bridge design is complete.

- During Early Works, we will perform the substructure repairs in the following order: 1st Street, 4th Street, E. Broad Street, 5th Street, and 7th Street.
- During Stage 1, we will reconstruct the superstructure for 1st Street, 4th Street, and E. Broad Street.
- During Stage 2, we will continue with the bridge superstructure replacement of 5th Street and 7th Street.

Early Works (Substructure Repairs) Construction Sequence



Early Works Crew One



Early Works Crew Two

Bridge Superstructure Reconstruction Construction Sequence



Superstructure Crew One



Superstructure Crew Two



Superstructure ABC Crew Three





Schedule Integration and Construction Areas

We established the general flow and stages of the project in order to provide safe and efficient work zones and travel ways through the project and developed our construction stages as described below. The schedule is divided into the five bridge sites. The five bridge reconstructions have been phased with the following constraints:

- Reconstruction of the 7th Street and E. Broad Street bridges shall not occur at the same time during the construction project.
- Reconstruction of the 7th Street and 4th Street bridges shall not occur at the same time during the construction project.

Sequencing Details

Substructure Repairs – Our Team evaluated the global sequence options to construct this project and developed the following sequence of construction.

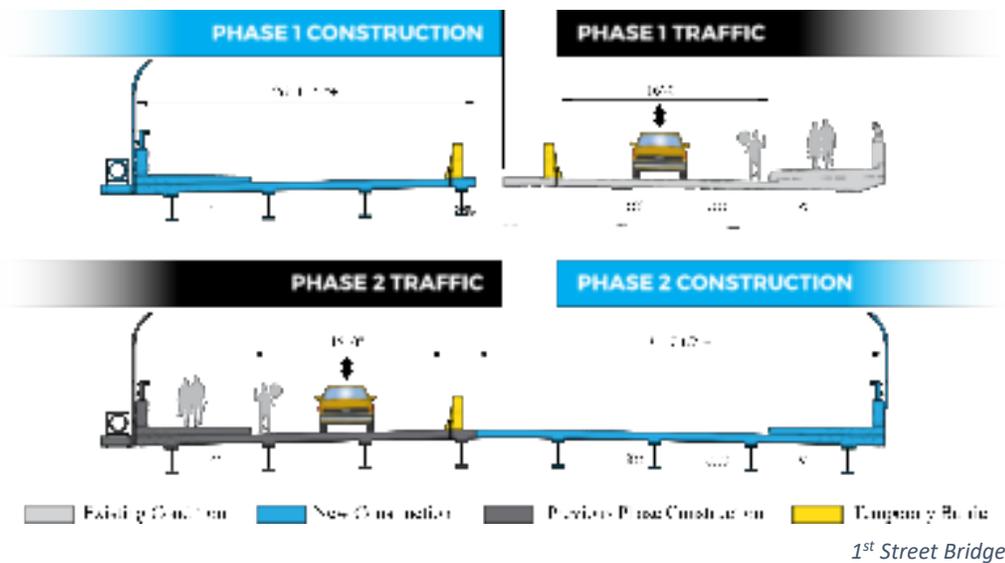
Early Works Stage – Substructure Rehabilitation

Substructure repairs will be performed on all structural elements for 1st Street Bridge, 4th Street Bridge, E. Broad Street Bridge, 5th Street Bridge, and 7th Street Bridge.

Stage I – Superstructure Reconstruction

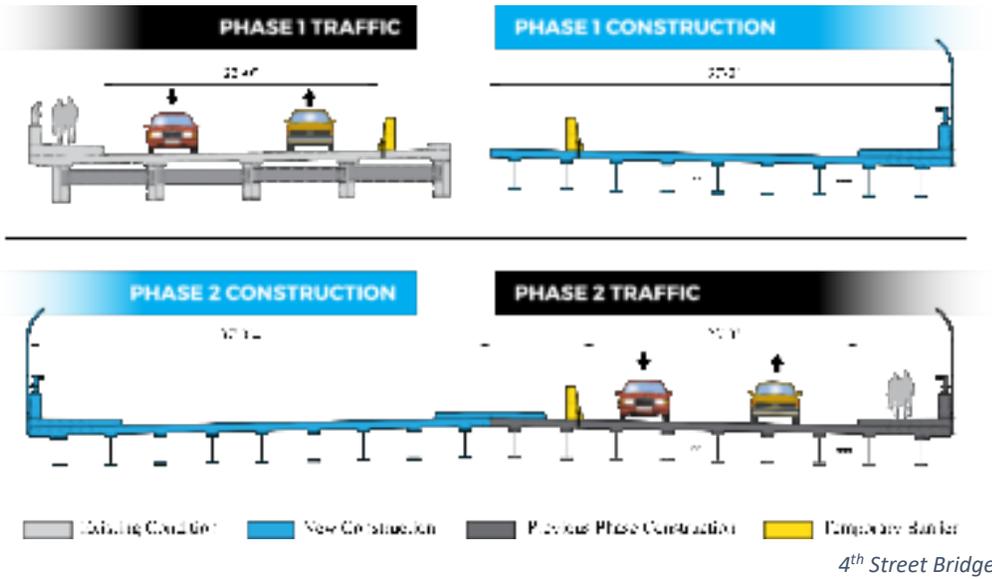
1st Street Bridge (2 Phases)

- Perform utility relocations
- Modify bridge substructure to accept new superstructure
- Reconstruct bridge superstructure and construct roadway improvements



4th Street Bridge (2 Phases)

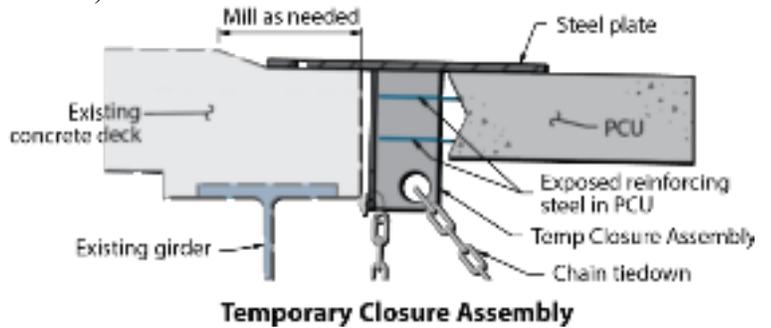
- Perform utility relocations
- Modify bridge substructure to accept new superstructure
- Reconstruct bridge superstructure and construct roadway improvements



E. Broad Street Bridge (Accelerated Bridge Construction)

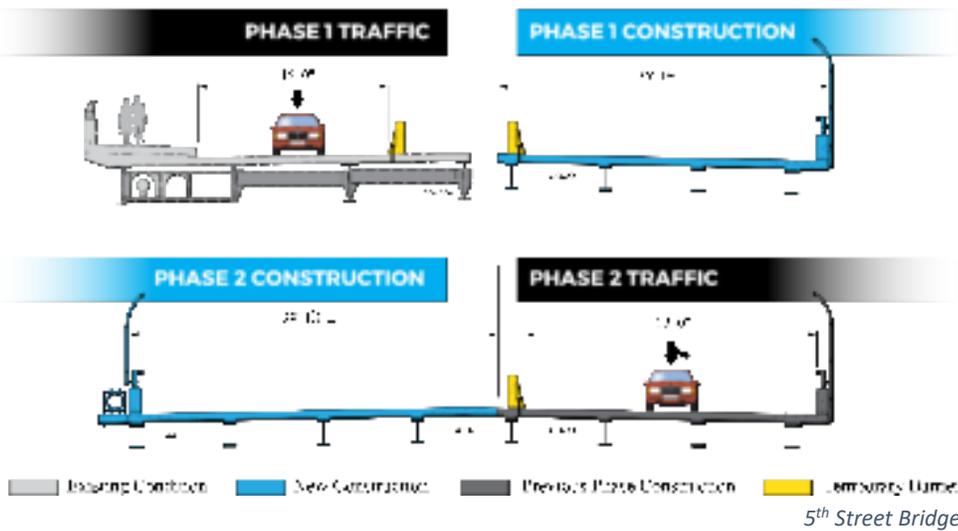
- Perform utility relocations
- Modify bridge substructure to accept new superstructure
- Reconstruct bridge superstructure and construct roadway improvements

Stage II – Superstructure Reconstruction



5th Street Bridge (2 Phases)

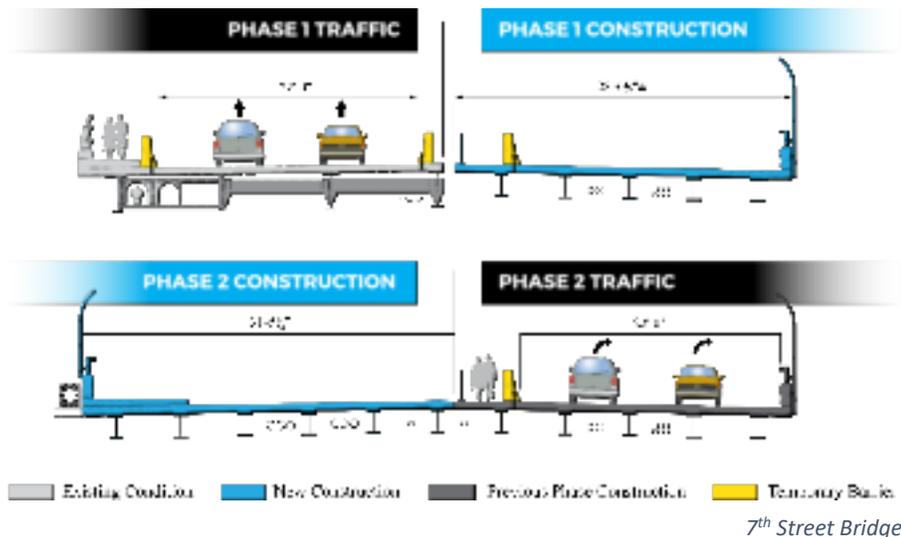
- Perform utility relocations
- Modify bridge substructure to accept new superstructure
- Reconstruct bridge superstructure and construct roadway improvements





7th Street Bridge (2 Phases)

- Perform utility relocations
- Modify bridge substructure to accept new superstructure
- Reconstruct bridge superstructure and construct roadway improvements



Safety

Safety is the core of our organization. It is imperative to the future of our employees and company that **“No One Gets Hurt.”** Our corporate safety program demonstrates AWC’s commitment to safety and is evidenced by our best-in-class safety rate of 0.72. Our culture extends not only to our employees but also to our clients, subcontractors, vendors, third parties, and the public we encounter along the way. Safety is personal, and it begins with each employee connecting personally with their peers and co-workers.

Our Project Manager, Larry Wadman, will set this tone from the beginning, expecting management to have open-door policies, walking the field discussing safety with all craftsmen, leading safety meetings, and sharing his project safety stories to assure everyone that safety is personal to him. Our Project Safety Manager, Richie Haehn, will build relationships with the entire job team, which are key to making safety personal. Richie will be supported by a team of safety professionals to assist with training, reporting, creating hazard analyses, indoctrinations, Reviewing Employees Actions and Performance (REAP) cards, and inspections. One key component to a successful safety program is the involvement and buy-in from the craft. Each craft-type will have a safety ambassador that will be part of the Craft Safety Committee. This committee will report concerns to the DBPM each week, go through leading indicators and plan for that week’s safety tour based on the weekly meeting and 3-week schedule.

Our design and construction approach establish a clear separation of construction activity from the traveling public. As interactions are eliminated, safety performance is increased. Each entrance and exit to the worksite will be identified with signs and illuminated so the traveling public knows to expect construction traffic and can begin maneuvers ahead of time.

Design - Safety begins with our design. Our Project Safety Manager will be a part of our design review process, in particular TTC/MOT, working hand in hand with the design team to ensure we are considering the safety of our employees and the traveling public first and foremost.



Safety will be integrated into the TTC/MOT design by providing a plan that provides the protection of the field staff and the traveling public in this highly traveled corridor. We will do this by carefully assessing construction ingress/egress points, minimizing temporary crossovers and traffic shifts, and exceeding the required minimums for clear zones, shoulder widths, and other elements, where possible, based on work zone constraints. Safety is incorporated into the design process for final design elements.

Planning - Planning for safety is an important first step to creating the project work plan. A full work plan will be created for every major operation. As an integral part of the planning and scheduling process, work plans will be developed with involvement from the Construction Manager, the Safety Manager, QA and QC Managers, superintendents, and Field Engineers. Each work plan includes a step-by-step procedure to complete the work. Each of these steps includes an area in which hazards are identified, and a workaround, elimination plan, or PPE is prescribed to deal with the hazard properly.

Once a week, each crew is required to review their work plans and step-by-step hazard analysis. The crew will modify this living document each week based on any hazards not identified, location changes, or revisions to the step-by-step procedure. Each crew member will sign this document each week and ensure it is up to date and relevant.

Every day the crews will start the day with a morning huddle where the operation plan for the day is discussed, including a review of a task hazard analysis for what is to be done that day. The morning huddle is a chance for all employees to have a voice and identify what they see as safety hazards. A Task Hazard Analysis (THA) will be completed every day, no matter how big or small the operation. The THA will address location access concerns, relevant housekeeping issues prior to starting the day, and any weather or other location-specific issues that need to be addressed prior to the beginning of the shift.

All foremen and project construction staff will be required to participate in the Reviewing Employees Actions and Performance (REAP) program once a week. The REAP program is intended to bring the staff and craft together to discuss safety and improvements that can be made to operations to promote health and safety. The staff person will observe an operation and document any issues, concerns, or accolades. The staff person will discuss those items with the crews on the spot.

A weekly job-wide meeting will be held each Monday morning to discuss hot topics for safety, quality compliance, and schedule. All personnel will be present at the meeting, which will be chaired by the Construction Manager. This simple meeting will allow the craft and staff to build a solid and trusting relationship and make sure that the entire job team is focused on the safety and schedule goals for the project.

To maximize public safety throughout the project, design and construction will be coordinated with the adjacent VDOT project to the north, along with any other VDOT or local municipality project in our footprint. AWC will share information and meet regularly with the adjacent project design and construction staff to coordinate maintenance of traffic, overhead signing throughout the corridor, and interface points, including the horizontal and vertical tie-ins of roadways.

Weekly Safety Items

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Weekly Safety Meeting THA Review	Weekly CSC/ DBPM Meeting THA Review	Weekly CSC Safety Walk THA Review	Safety Team Walk THA Review	THA Review





Training - Our safety plan and programs evolve through the life of a project to address specific needs and changing conditions. AWC has many practices and programs that will be utilized during the Project. Through the life of the project, these programs will be refocused or modified to account for current situational needs.

Our Safety Manager will lead the safety program, which will include the following major items:

- **On-boarding:** This is perhaps the most important tool we have to ensure all our employees start off on the right foot with the information and initial training they need to do their job. At indoctrination, our Safety Managers, Construction Manager, and Design-Build Project Manager have an opportunity to connect with each employee first thing to “set the tone and expectations” for safety performance on the job.
- **REAP Program:** Each foreman and salary employee will be required to complete a REAP card each week. The purpose is for each employee to step back and watch an operation in progress for 5-10 minutes. A brief write-up of observations, both good and bad, will be discussed on the spot with the crew to give improvement suggestions or accolades. These simple interactions will help assure we have the right tools, the best access and build a team that trusts one another to make sure we all go home safely.
- **Near Miss Program:** We encourage our employees to call out “Near Misses” when they see them in the field. The employees verify a near miss, stop and correct the action and then notify their Superintendent so that the near-miss can be turned in to our Safety Department. These near misses are tracked in a database that will identify leading indicators for determining training needs.
- **Craft Safety Committee:** Each craft group (operators, laborers, carpenters, electricians, etc.) will nominate a Safety Champion to be a part of the Craft Safety Committee (CSC). The CSC will be responsible for a weekly jobsite safety tour. On this tour, they will meet with their peers, discuss operations, and listen to any concerns the employees might have. The CSC will meet with the DBPM and Safety Manager once a week to discuss the tour and voice any concerns from the craft on how to improve safety (tools, access, personnel, etc.). During this meeting, the group will also discuss upcoming operations or safety trends to focus on during the next week’s walk. The CSC members will be identified to each new hire during their indoctrination process.
- **National Construction Safety Week:** AWC is an active leader in this annual event dedicated to refocusing attention on safety throughout the construction industry. During safety week, AWC will participate in many activities to train all craft, subcontractors, clients, and designers on the hazards of our project. Items like Safety Rodeos are led by our craft and are excellent opportunities where craftsmen or experts will train the entire project team on their operations or areas of expertise.
- **Celebration and Recognition programs:** Celebration and recognition programs that will reward positive behavior and achieving milestones relating to safety will be established. Examples are project giveaways (hats, shirts, mugs, coats) and lunches (both crew specific and job-wide).
- **Training:** AWC provides comprehensive safety training for all employees to competently complete their work while building a culture where everyone looks out for each other. Some of the specific training classes we will provide are:
 - OSHA 30 for all foremen and up
 - OSHA 10 for all employees
 - Equipment Trainings – crane, manlift, forklift
 - Excavation and Trench Safety
 - Confined Space
 - Fall Protection
 - First Aid / CPR – all foremen and up





Measurement - Our safety performance will be measured by many tools. These tools include but are not limited to:

- REAP indicators are tracked monthly to assure we are improving on the areas that needed focus per our staff and foremen inspections.
- Monthly safety audits from off-site management personnel (“outside set of eyes”) to assure we are not missing any key details. Audits are reviewed with the DBPM and job team and action items will be assigned to specific team individuals.
- Weekly craft safety committee will tour the project and advise their peers on issues or corrections that need to be made, they will also be able to inform the DBPM of concerns or issues in the field that need to be addressed.
- Manhours will be tracked per foremen/superintendent along with their near misses, first aids, recordables, and restricted duty cases. Trainings will be targeted to groups as needed based on improving safety performance.

Data tracked and compiled as described above will be used to modify and plan our safety programs, trainings, and incentives. The Craft Safety Committee feedback will help us to improve operations, assure we have the needed tools and resources to assure No One Gets Hurt.

Operations

Our approach to operations includes assigning separate construction teams to each of the project sites. This allows a smaller staff to focus on constructing a smaller portion of the Project while allowing senior staff to guide, plan and monitor overall project operations. Area staff will be assigned the resources, labor, and equipment required to meet the construction schedule. Senior staff will manage schedule and production and adjust resources in order to maintain the project schedule.

All bridge sites will start with the substructure repairs and then move to Stage 1. AWC has developed its schedule to maximize resource utilization and keep crews productive for the duration of the project. For example, the substructure crew will progress from one bridge to the next one in the same order that the bridge superstructure will be reconstructed.

Stage 1: Crews will be assigned the bridge sites at 1st Street and 4th Street to work concurrently on the demolition and reconstruction of the superstructure and the roadway improvements.

In addition, specialized ABC crews will perform the bridge superstructure reconstruction at E. Broad Street during this stage of construction.

Stage 2: Crews will be assigned the bridge sites at 5th Street and 7th Street to work concurrently on the demolition and reconstruction of the superstructure and the roadway improvements. The crews that worked on 1st Street bridge will be used to reconstruct the 5th Bridge, and the crews that worked on 4th Street will be used to reconstruct the 7th Street Bridge. The schedule logic provides for the 7th Bridge to commence superstructure reconstruction only after the 4th Street and E. Broad Street bridges are complete.

As work progresses, schedule and production will be closely monitored to identify activities that have challenges that may require the addition of resources to maintain the project schedule. Weather, production rates, and unanticipated conditions can provide challenges to the project team to keep the Project on time and within budget. Having multiple construction teams being able to focus within an area and communicate back to the DBPM, and CM will allow quick identification of issues that may impact the overall project schedule.





Staging and Storage

We have identified the following area within VDOT right of way that have the potential to serve for placing a temporary construction yard. We have identified other possible properties within close proximity of the project site to serve as temporary offices, as detailed below in Figure 4.5.1-1.



Figure 4.5.1-1

Laydown Area

Include potential city blocks with office space for field office/VDOT field office. The Casting Yard for the E. Broad Street PBUs fabrication will be located at the fabrication yard from a VDOT-approved supplier.

4.5.2 TRANSPORTATION MANAGEMENT PLAN

Approach to Transportation Management Plan (TMP)

As this project involves multiple locations with varying traffic conditions and requirements, it is important to develop a TMP that is clear, concise, and comprehensive. Each project will have a unique Maintenance of Traffic and Sequence of Construction based on the particular needs at that location. However, because the projects are all interrelated, the TMP outlines how the work will be completed, describing the impacts at each location and compounded impacts of the work at multiple locations. The TMP will also describe how AWC will balance the need to maintain smooth traffic flow and the need to close lanes to accommodate construction. It will include all modes of traffic, including vehicles, bicyclists, pedestrians, and transit. It will highlight AWC's commitment to the safety of the traveling public and workers alike. The TMP will set expectations for what information is disseminated to stakeholders, the public, and by whom. It will also define procedures for incident response should something out of the normal occur. The AWC Team understands the role of the TMP and is committed to successfully developing a comprehensive document before beginning construction, setting the stage for a successful construction project.

Our TMP will be developed in accordance with VDOT Instructional and Informational Memorandum IIM-LD-241.7. Individually and collectively, each of the five bridges is considered a Category C project, recognizing that they are complex and affect Interstate I-95 for a long duration. As such, the TMP will include all required sections of a TMP, the Temporary Control Plan, the Public Communication Plan, and the Transportation Operations Plan.



Temporary Traffic Control Plan – The Traffic Control Plan varies from location to location and is unique on the interstate. Below is a detailed description of AWC’s approach for each, which leads to the development of the TMP and the construction plan sheets. All elements of the Traffic Control Plan will be the requirements of the Virginia Work Area Protection Manual (VWAPM). In addition, the TMP and construction plan sheets will meet the requirements of the RFP as detailed below.

I-95 Traffic Control Approach – Our TMP is intended to have as little impact on I-95 as practical. It also complies with design parameters as described in the RFP:

- Maintains current speed limit of 55
- Maintain three (3) lanes of traffic in each Northbound and Southbound direction on I-95 for the duration of the Project (except as noted in the lane Closure Restriction table)
- Long term lane shifts may only be considered for shifting I-95 traffic to facilitate the replacement of the five crossing route superstructures
- Lane widths shall not be reduced to less than 11 feet
- Maintain at least 43 ft of clear width pavement and shall provide the following:
 - 3 – 11' (minimum) paved travel lanes
 - 8' (minimum) paved outside shoulder
 - 1- 2' (minimum) paved inside shoulder
- All long-term stationary work zones on I-95 shall include temporary acceleration and deceleration lanes for access to and from the work zone
- Restore all lanes of traffic per the times specified

Day	Shoulder Closure Restrictions allowed	Lane Closure Restriction allowed (95 lanes reduced from 3 to 1)	Total Closure (max 15 min)*	Ramp Closures allowed
Mon-Thurs	12am-6am, 9am-3pm, 8pm-12am	12am-6am, 8pm-12am	12am-6am, 10pm-12am	12am-6am, 8pm-12am
Friday**	12am-6am, 9am-3pm	12am-6am	12am-6am	12am-6am
Saturday**	N/A	N/A	N/A	N/A
Sunday**	8pm-12am	8pm-12am	10pm-12am	8pm-12am

* Shall be in accordance with requirement in Work Area Protection Manual for Slow Roll Operations

** Friday, Saturday, and Sunday (daytime: Midnight - 8pm) closures will need the approval of the VDOT Project Manager.

Table 4.5.2-1 I-95 Allowable shoulder and lane reductions

I-95 under 1st St, 4th St, 5th St, and 7th St Traffic Control – Impacts to I-95 are determined by the work that needs to be completed for each bridge. While each bridge and location are a little different and require different MOT treatments, there are some common tasks that need to occur for each. For instance, each bridge needs demolition of the existing deck, removal of the existing beams, repair of the existing piers, setting of new beams, and construction of the new deck. Each of these tasks needs to be accommodated in the TMP and MOT design while meeting the requirements outlined above.

AWC will demolish the deck on each bridge in phases. To facilitate this work, a debris shield will first be constructed under each bridge. In addition, pier repairs that can be accomplished with the existing deck in place will commence taking advantage of the maintenance of traffic required for the installation of the debris shield. The debris shield will allow demolition of the existing bridge deck and prevent debris from falling onto I-95





below. Demolition and removal of the deck will be performed during times when closures of lanes of I-95 are allowed, as described in Table 4.5.2-1, so that lanes can be closed while the demolition is occurring. The debris shield is designed to allow this work while traffic is flowing on I-95. Lane closures will be utilized for the most intense demolition and removal activities, which will allow work to be accomplished while enhancing the safety of traffic below. Figure 4.5.2-1 generally shows how lane closures will be utilized to complete the work. This process will be repeated for each phase of bridge construction and for each direction of I-95. Two lanes of travel will remain open along I-95 to the extent possible during this work, and only one direction of I-95 impacted at a time. Lanes closed to accommodate the installation of the debris shield, and the demolition of the deck will be detailed in the construction plan sheets, following VWAPM TTC 4.2 – Stationary Operation on a Shoulder, TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway, TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway, TTC 18.2 – Multi-Lane Closure Operation, TTC 37.2 – Work Operation in the Vicinity of an Exit Ramp, TTC 38.2 – Partial Exit Closure Operation, and TTC 39.2 – Work in the Vicinity of an Entrance Ramp. Other TTC diagrams may be necessary as the Temporary Traffic Control Plan is developed. AWC will follow the design parameters for I-95 described above in this section.

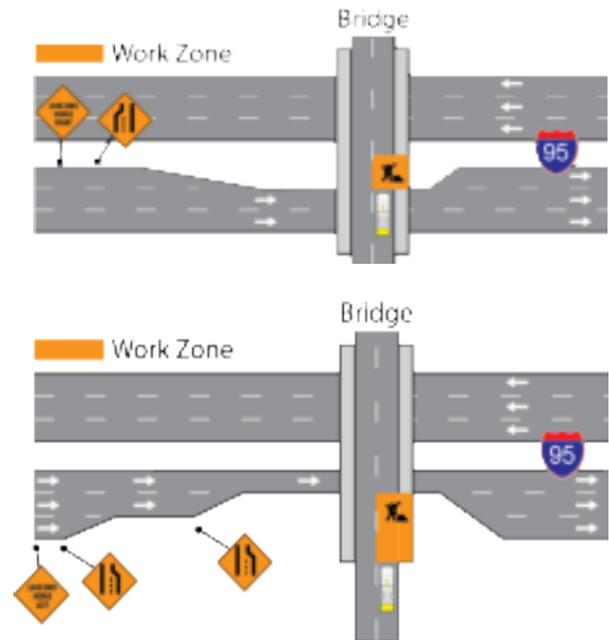


Figure 4.5.2-1 Typical lane closures for deck and beam removal over one direction of I-95

Once the existing deck is removed, the existing beams need be removed. This requires working over all lanes of traffic in the direction of I-95. This work will be performed by “slow rolling” or temporarily stopping traffic on I-95 leading up to the work location for up to 15 minutes. This operation will follow VWAPM TTC 66.1 – Slow Roll Operation on a Multi-Lane Roadway, allowing enough time to lift each beam and set it to the side before allowing traffic to flow. Cranes required to lift the beams and the trucks required to remove the beams from the site will be within lane closures during allowable closure hours as described in Table 4.5.2-1. The slow roll process will be repeated, allowing time between for any traffic congestion that has occurred to dissipate and to reset the crew responsible for the slow roll. With the existing deck removed, AWC will make repairs to the existing piers. Repairs to the piers do not require the same intensity of traffic control on I-95 as other operations, and work will not be required over the active travel lanes of I-95. This work will primarily be performed from along I-95 and from the workzone on the cross street. Figure 4.5.2-2 generally shows the closures needed to perform repairs on piers. The figure shows the impact of repairing the center pier using shoulder closures and single lane closure. Similar lane closure strategies will be utilized to repair the other piers at each location. Two lanes of travel will remain open along I-95 to the extent possible during this work. It will be accomplished using lane and shoulder closures, following VWAPM TTC 4.2 – Stationary Operation on a Shoulder, TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway, TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway, TTC 18.2 – Multi-Lane Closure Operation, TTC 37.2 – Work Operation in the Vicinity of an Exit Ramp, and TTC 39.2 – Work in the Vicinity of an Entrance Ramp, depending on the specific needs at each location, during allowable closure hours as described in Table 4.5.2-1. Lanes and or shoulders closed to accommodate the repair of the piers will be detailed in the Temporary Traffic Control Plan and construction plan sheets.

After the piers have been repaired, AWC will place new beams. This operation will once again require working over all lanes of traffic in the direction of I-95. Similar to removing existing beams, this work will be performed



by “slow-rolling” or temporarily stopping traffic on I-95 leading up to the work location for up to 15 minutes. This operation will follow VWAPM TTC 66.1 – Slow Roll Operation on a Multi-Lane Roadway, allowing enough time to lift each new beam into place and securing it before allowing traffic to flow. Cranes required to lift the beams and the trucks required to lift the new beams from the site will be within lane closures during allowable closure hours as described in Table 4.5.2-1. The slow roll process will be repeated allowing time between for any traffic congestion that has occurred to dissipate and to reset the crew responsible for the slow roll.

With new beams in place, AWC will construct the decking of new bridges. Similar to deck removal, a debris shield will first be constructed under each bridge. This debris shield will allow construction of the new deck and prevent debris from falling onto I-95 below. Construction of the deck will be performed during times when closures of lanes of I-95 are allowed, as described in Table 4.5.2-1 so that lanes can be closed while the construction is occurring. The debris shield is designed to allow this work while traffic is flowing on I-95. Lane closures will be utilized for the most intense demolition and removal activities, which will allow work to be accomplished while enhancing the safety of traffic below. The general sequence shown in Figure 4.5.2-1 will be repeated to allow the construction of the new deck. Two lanes of travel will remain open along I-95 to the extent possible during this work. Only when working over the middle lane will a multiple lane closure be required. Lanes closed to accommodate the installation of the debris shield and the demolition of the deck will be detailed in the construction plan sheets, following VWAPM TTC 4.2 – Stationary Operation on a Shoulder, TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway, TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway, TTC 18.2 – Multi-Lane Closure Operation, TTC 37.2 – Work Operation in the Vicinity of an Exit Ramp, TTC 38.2 – Partial Exit Closure Operation, and TTC 39.2 – Work in the Vicinity of an Entrance Ramp. Other TTC diagrams may be necessary as the Temporary Traffic Control Plan is developed. AWC will follow the design parameters for I-95 described above in this section.

After the new bridge deck is complete, there may be intermittent lane closures needed to install utilities and appurtenances to complete the work. Lane closures required for this work are much less frequent and much less intense. It will be described in the Traffic Control Plan and follow the design parameters for I-95 described above in this section. This process is repeated for each bridge location and for each phase at each location until construction is complete.

I-95 under E. Broad Street Traffic Control – The process outlined above is similar to the process to construct E. Broad Street in terms of demolition and pier repair. The construction method for E. Broad features prefabricated sections with the deck and beams, which are lifted into place as a section. Because of the requirements for the traffic operation of E. Broad Street, the bridge can only be closed over the course of eight weekends. All lanes must remain open during normal weekday times. While the process is the same as detailed above for the other bridge locations, demolition and construction of E. Broad Street must be complete for each section in a single weekend and opened to traffic during the week. To accommodate the expedited process, AWC will utilize lane closures along I-95 during the week to perform preparatory work leading up to a weekend closure of E. Broad Street following VWAPM TTC 4.2 – Stationary Operation on a Shoulder, TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway, TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway, TTC 18.2 – Multi-Lane Closure Operation, TTC 37.2 – Work Operation in the Vicinity of an Exit

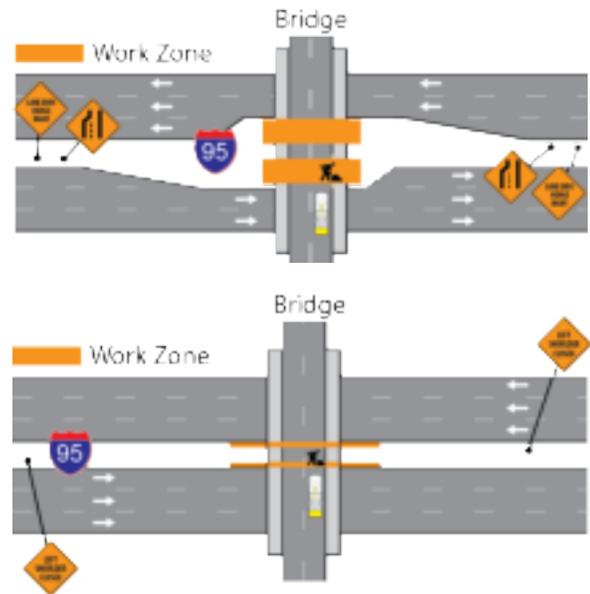


Figure 4.5.2-2 Typical phasing for pier repairs along I-95



Ramp, and TTC 39.2 – Work in the Vicinity of an Entrance Ramp. Once the preparatory work is complete, E. Broad Street will be closed for the weekend, allowing for the removal of the existing deck and beams and placement of the new prefabricated deck and beam sections prior to opening the bridge Monday morning. During the weekend closures, we will utilize a combination of traffic management strategies that are compliant with the technical requirements, such as bidirectional traffic utilizing a movable barrier. Other strategies need the approval of the VDOT PM to perform during certain hours. AWC will evaluate and gain approval of these other strategies during the design of the Temporary Traffic Control Plan and the development of the TMP as appropriate to optimize the construction schedule and minimize impacts to traffic. These strategies may include, VWAPM TTC 66.1 – Slow Roll Operation on a Multi-Lane Roadway, TTC 4.2 – Stationary Operation on a Shoulder, TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway, TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway, TTC 18.2 – Multi-Lane Closure Operation, TTC 37.2 – Work Operation in the Vicinity of an Exit Ramp, TTC 38.2 – Partial Exit Closure Operation, and TTC 39.2 – Work in the Vicinity of an Entrance Ramp to accommodate the removal and replacement of bridge deck and pier repairs. This process is repeated for each weekend. Other TTC diagrams may be necessary as the Temporary Traffic Control Plan is developed. AWC will follow the design parameters for I-95 described above in this section.



Figure 4.5.2-3 Detours to support ramp closures

I-95 Anticipated Detours – To accommodate the construction of the E. Broad St bridge, some detours will be required. Known detours required are as follows:

- 7th St on-ramp to northbound I-95
- E. Broad St on-ramp to southbound I-95

Both known detours are shown in the RFP as an acceptable traffic control method. As shown in Figure 4.5.2-3, the detour routes are independent of each other and do not overlap, minimizing the impact to local streets, and will be employed during the traffic control needed for I-95 during construction. Other detours may become necessary as the design develops and will be coordinated with VDOT, the City of Richmond, GRTC, and other stakeholders as appropriate.

I-95 Coordination of Work Zones – AWC will utilize several strategies to safely manage traffic during the five bridges' construction. As these various strategies are employed, AWC will look for ways to limit the number of times lane closures are put in place, even during allowable closure hours. The lane closure events described apply to each location. We are also cognizant that closure for one location may allow work on other bridges to occur under the same lane closure because of the proximity of the bridges and the length of the closure required to safely manage traffic. As the schedule for the bridge construction evolves, these multiple outcomes of traffic management strategies will be utilized to the extent possible to limit the frequency of impacts to I-95 traffic. There are two exceptions explicit in the RFP that are not allowed:

- 4th St and 7th St. bridges cannot be under construction simultaneously
- E. Broad Street and 7th St bridges cannot be under construction simultaneously

In both cases, AWC's Temporary Traffic Control Plan will schedule the work accordingly. There are opportunities for multiple bridges to concurrently use the same traffic control as scheduling permits, as shown on the following page in Figure 4.5.2-4.



LOCATION	1st St	4th St	5th St	7th St	E. Broad St
1st St	--	⊙	⊙	⊙	⊙
4th St	⊙	--	⊙	✗	⊙
5th St	⊙	⊙	--	⊙	⊙
7th St	⊙	✗	⊙	--	✗
E. Broad St	⊙	⊙	⊙	✗	--

Figure 4.5.2-4 Simultaneous construction allowances

I-95 Overhead Sign Relocation – There are two overhead signs that are currently mounted to the bridge structure, southbound on the 1st St Bridge and southbound on the 7th St Bridge. These will be removed from the existing bridge locations and collocated on cantilever sign structures along I-95. Constructing the new cantilever will be accomplished using VWAPM TTC 4.2 – Stationary Operation on a Shoulder and TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway when those closure operations are allowed as detailed in Table 4.5.2-1. To set the cantilever sign and arm, VWAPM TTC 66.1 – Slow Roll

Operation on a Multi-Lane Roadway will be used to work over lanes of I-95. This will also be accomplished during allowable closure hours.

Cross Street Traffic Control Approach – Our TMP is intended to have as little impact on I-95 as practical, performing work from the cross street to the extent practical. That does not mean that our traffic control management of the local streets is more impactful. The needs of the local street are much different than along I-95, and we take advantage of those differences to create a comprehensive traffic control plan for the entire project. Cross streets have an impact on the City of Richmond’s traffic control network, and as such, access for multiple modes of travel safely through and around the work is paramount. Pedestrians and Transit are as important as vehicle traffic, and safety above minimizing delays is the goal of our design. Traffic Control Plans will be developed to facilitate the construction of the bridges. VDOT, the City of Richmond, and GRTC all need close coordination during the design to balance their needs with the need to close lanes to allow construction to advance safely and efficiently. Each bridge location has unique features and is described in more detail below.

1st St Bridge Traffic Control – The 1st St Bridge will be constructed in two phases similar to the MOT concept included in the RFP package. The phases will meet the following minimum requirements:

- Lane requirements: 1 Lane
- Minimum lane width 10’
- Maintain pedestrian path (1 side during each phase)
- Maintain transit route and existing stops
- Design speed 30 mph

AWC will maintain one lane across the bridge with a minimum width of 10’. Due to the close proximity of E. Duval St and E. Baker St to the workzone and the work that needs to be completed, some vehicle movements to and from E. Duval St and E. Baker St will be restricted in some phases similar to the RFP concept, which will be detailed in the construction plan sheets, including the appropriate detours. For instance, E. Duval St will be only be allowed to turn away from the bridge. No right turn for westbound and no left turn for eastbound will be allowed. Traffic destined to cross the bridge from these approaches, including buses, will be detoured to Chamberlayne Parkway, similar to the detour shown in the RFP MOT plans. Figure 4.5.2-5 shows how traffic will generally be managed during construction. Pedestrians will have access to a dedicated path across the bridge on one side at a time, depending on the phase of work. Accommodations to cross 1st St will be on either side of the bridge to provide access to the open pedestrian path across the bridge from both sides of the approach streets, including marked crosswalks and additional pedestrian signage to warn drivers of the crossing. By locating the pedestrian movements and limiting some vehicle movements as shown in Figure 4.5.2-5, conflicts between pedestrians and vehicles are minimized, improving pedestrian safety. A Pedestrian Management Plan will be developed and coordinated with Stakeholders, including the City of Richmond and GRTC, and included in the TMP document.

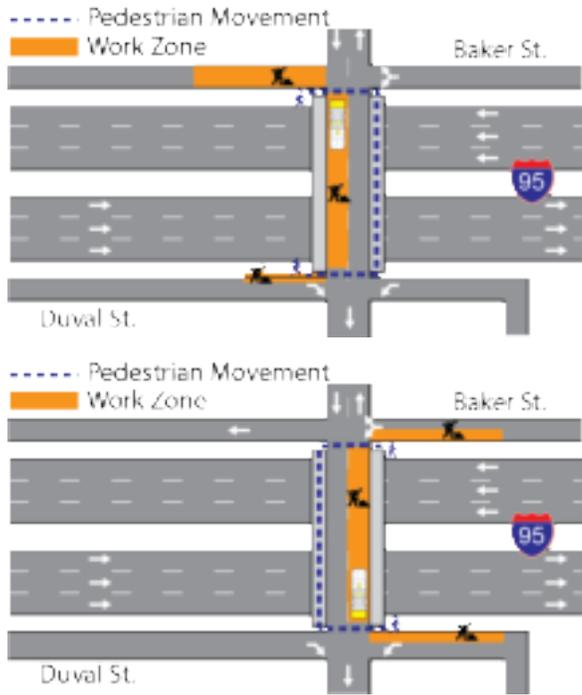


Figure 4.5.2-5 Proposed 1st St. Vehicle and Pedestrian Movements

There are three GRTC bus routes across the 1st St Bridge running every 15 minutes that will be maintained. There are also several bus stops near the bridge, as shown in Figure 4.5.2-6. A bus route detour will be required for routes using E. Duval, as shown in the RFP MOT plans. The bus stop on E. Duval will remain open. The other bus stops will also remain in place. MOT and the impacts on transit will be coordinated with GRTC through the design, and mitigation measures will be reflected in AWC’s Traffic Control Plan.

4th St Bridge Traffic Control – The 4th St Bridge will be constructed in two phases similar to the MOT concept included in the RFP package. The phases will meet the following minimum requirements:

- Lane requirements: 1 Lane each direction
- Minimum lane width 10’
- Maintain pedestrian path (1 side during each phase)
- Design speed 30 mph

The approaches to the 4th St bridge feature a

curb and gutter with a grass median. During construction, AWC will maintain one lane in each direction, pushing traffic to one side of the bridge adjacent to the existing pedestrian path while the other half of the bridge is under construction. In the next phase, traffic is pushed to the opposite side of the new structure while construction of the bridge is completed. This requires part of the median to be removed on both sides of the bridge to create a temporary crossover. The crossover will be designed to the minimum 30 mph design speed as stated in the RFP and will accommodate one lane in each direction. The approaches from each direction will be reduced from two lanes down to one lane using TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway before reaching the crossovers.

Figure 4.5.2-6 1st St. area GRTC bus routes



Pedestrians will have access to a dedicated path across the bridge on one side at a time, depending on the phase of work. A Pedestrian Management Plan will be developed and coordinated with Stakeholders, including the City of Richmond and GRTC, and included in the TMP document.

There are three GRTC bus routes across the 4th St Bridge that will be maintained. There are also two bus stops near the bridge. Both stops will be maintained as close to the existing location to the extent practical. MOT and the impacts on transit will be coordinated with GRTC through the design, and required mitigation measures will be reflected in AWC’s Traffic Control Plan.

5th St Bridge Traffic Control – The 5th St Bridge will be constructed in two phases similar to the MOT concept included in the RFP package. The phases will meet the following minimum requirements:

- Lane requirements: 1 Lane
- Minimum lane width 11’
- Design speed 30 mph



The existing 5th St bridge is the least complex of the bridges to manage traffic across. Existing pedestrian paths on the bridge will be removed in the final condition and, therefore, will not be maintained during construction, maximizing the width of the work area. AWC will maintain one lane of traffic in each one direction, pushing traffic to one side of the bridge while the other half of the bridge is under construction. In the next phase, traffic is pushed to the opposite side on the new structure while construction of the bridge is completed. The approach direction will be reduced from two lanes down to one lane using TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway or TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway. Additional advanced warning signage, as described in the RFP, will be included in the Traffic Control Plan.

There is one GRTC express bus route that uses this route during peak hours only. No bus stops are within the project area. While the construction phasing does not directly impact the route, there is a potential for traffic delays due to the allowed reduction in lanes open across the bridge. These impacts will be coordinated with GRTC through the design and required mitigation measures will be reflected in AWC's Traffic Control Plan.

7th St Bridge Traffic Control – The 7th St Bridge will be constructed in two phases similar to the MOT concept included in the RFP package. The phases will meet the following minimum requirements:

- Lane requirements: 2 ramp lanes exiting the city (NB)
- Minimum lane width 11'
- Maintain pedestrian path (1 side during each phase)
- Design speed 30 mph

During construction, AWC will maintain two lanes of traffic across the 7th St bridge allowing traffic to exit the City of Richmond to I-64. Open lanes will be pushed to one side of the bridge adjacent to the existing pedestrian path, while the other half of the bridge is under construction. In the next phase, traffic is pushed to the opposite side of the new structure while construction of the bridge is completed. The northeast approach to the work zone is currently one-way away from the City. This will require a single lane closure to merge three lanes into two lanes across the bridge following VWAPM TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway. The southwest direction of 7th St will be closed across the bridge and will utilize a detour as described in the RFP. The signal at E. Duval St. will remain in place and operational. AWC will coordinate temporary signal timing of the signal with the City of Richmond, as some signal phases will not be used as part of temporary traffic control.

Pedestrians will have access to a dedicated path across the bridge on one side at a time, depending on the phase of work. When work is being performed on the north half of the bridge, pedestrians will utilize a path between traffic and the work area. Pedestrians will be separated from traffic by a barrier and separated from the work area by a fence. Pedestrians will be routed from the approach sidewalks on the north side of 7th St to this path without crossing traffic. This will prevent intrusion into each area by either pedestrians or construction activities. A Pedestrian Management Plan will be developed and coordinated with Stakeholders, including City of Richmond and GRTC, and included in the TMP document.

There are several GRTC express bus routes that use this route during peak hours only. No bus stops are within the project area. While the construction phasing does not directly impact the route, there is a potential for traffic delays due to the allowed reduction in lanes open across the bridge. These impacts will be coordinated with GRTC through the design and required mitigation measures will be reflected in AWC's Traffic Control Plan.

E. Broad Street Bridge Traffic Control – The E. Broad Street Bridge is a vital connection in the City of Richmond's transportation network. AWC will construct this bridge by fully closing E. Broad Street on weekends only for up to eight weekends, similar to the MOT concept included in the RFP package. These closures allow construction of the new bridge using Accelerated Bridge Construction techniques. The phases will meet the following minimum requirements:



- Weekend closure is allowed from 8 PM on Fridays to 6 AM Mondays.
- Lane requirements: 1 Lane in each direction during the weekday nights; Full closure allowed for the weekends
- Minimum lane width 10'
- Maintain pedestrian path
- Design speed 30 mph

AWC will construct the new E. Broad Street bridge in sections during the allowed full weekend closures. At the end of each weekend, work will be completed to a point all lanes of E. Broad Street can re-open to weekday traffic. During the week, lane closures will be utilized during night hours to prepare the bridge for weekend construction. One lane in each direction will be maintained during the weekday nights using VWAPM TTC 16.2 – Outside Lane Closure Operation on a Four-Lane Roadway, TTC 17.2 - Inside Lane Closure Operation on a Four-Lane Roadway, and TTC 37.2 – Work Operation in the Vicinity of an Exit Ramp. Some of the work accomplished during the weekday nights near the on-ramp to northbound and southbound I-95 may require the ramp to be closed during allowable closure hours. A detour will be utilized similar to the detour described in the RFP at this location. AWC will coordinate with VDOT and City of Richmond during the design and required mitigation measures will be reflected in the Traffic Control Plan.

Pedestrians will have access to a dedicated path across the bridge on one side at a time, including during the weekend full closures. While the full closures are in use, pedestrians will be separated from the work area by a fence. Pedestrians will be routed from the approach sidewalks this path on either side of the work zone without crossing traffic. This will prevent intrusion into each area by either pedestrians or construction activities. A Pedestrian Management Plan will be developed and coordinated with Stakeholders, including City of Richmond and GRTC, and included in the TMP document.

There are several GRTC bus routes across the E. Broad Street Bridge that will be maintained. There are no bus stops near the bridge. While the construction phasing does not directly impact the routes during weekday night closures, lane reductions could have a minor impact on buses. During full closures on the weekend, buses will follow a detour similar to the detour described in the RFP at this location. MOT and the impacts on transit will be coordinated with GRTC through the design, and required mitigation measures will be reflected in AWC's Traffic Control Plan.

Cross Street Coordination of Work Zones – As described, AWC will utilize several strategies to safely manage traffic during the construction of the five bridges. Several bridges may be under construction at any one time based on AWC's schedule and as shown in Table 4.5.2-3. Detours will be coordinated to prevent overlapping detours from being in place at the same time. AWC will coordinate with VDOT and City of Richmond during the design and required mitigation to coordinate concurrent bridgework will be reflected in the Traffic Control Plan.

Adjacent Project Coordination of Work Zones – AWC understands that other nearby projects may impact our Traffic Control Plan and vice versa, requiring coordination in either the design of construction plans in the scheduling of work. In some cases, these are VDOT projects, and some are City of Richmond and are a mix of roadway and site development types of projects. The timing of many of these projects is likely to change over time. Coordination with the stakeholders of these projects will occur through the design phase, and required mitigation will be reflected in AWC's Traffic Control Plan (see Table 4.5.2-2 Adjacent Project Potential Impacts on the following page).



Table 4.5.2-2 Adjacent Project Potential Impacts

Project Name	Project Owner	Potential Impact	Mitigation	Locations with Potential Impact				
				1st St	4th St	5th St	7th St	E. Broad St
I-95/I-64 Overlap: Emergency Pull-offs	VDOT	No direct impacts from the construction of Emergency Pull-offs , however, NB workzones could overlap with our project	Coordinate workzone signage as necessary	✓				
I-95 SB ramps at Route 1 (Belvidere St)	VDOT	No direct impacts from the construction of SB ramps, however, SB workzone signage could overlap with our project	Coordinate workzone signage as necessary	✓				
I-95 SB ramps at Maury St	VDOT	No direct impact to our project. Should the ramp project require detour routes, coordination between projects will be necessary to avoid using common detour routes at the same time	Coordinate detours to prevent overlapping detours as necessary					✓
I-95 SB Lane Re-alloc/Arthur Ashe Blvd ramp	VDOT	No direct impact to our project.	Coordinate with project to confirm there is no impacts to our project					
Broad Street Pedestrian Hybrid Beacon	COR-LAP	Directly adjacent to E. Broad St. bridge; construction will not overlap, however, the workzone for the Beacon project could be within our projects workzone if the Beacon work occurs overnight or on a weekend	Coordinate workzone signage as necessary					✓
Shockoe Valley St. Improvement	COR-LAP	Scheduled to be advertised in Feb 2023. Workzone for the road improvement project could overlap with our project if work is to occur on weekends or overnight. E. Broad St. Bridge is scheduled to complete summer of 2023	Coordinate workzone signage and schedule as necessary to minimize overlaps; if overlaps in schedule must occur, coordinate the workzone signage to implement a workzone that is cohesive to the public					✓
Broad St. over CSXT Right-of-Way next to I-95/I-64 Overlap	COR-LAP	Scheduled to start at the end of 2023; E. Broad St. Bridge is scheduled to complete summer of 2023; no direct impact to our project	Coordinate with project to confirm there is no impacts to our project					
7th St at I-95/I-64 Interchange	COR-LAP	Scheduled to be awarded as a Design-Build project in 2022; 7th St bridge work is scheduled to be complete in summer 2024; relocation of Helipad, driveway and the addition of a signal will impact our workzone, depending on how the individual phases of the projects align in schedule.	Coordinate workzone design with interchange project's workzone; coordinate the workzone signage to implement a workzone that is cohesive to the public				✓	
RRHA redevelopment scenarios – North Jackson Ward	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii and temporary signal timing	✓				
Additional growth and traffic volumes over time for Barton Heights and Brookland Park neighborhoods	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii and temporary signal timing		✓	✓		
Potential building addition for Forensic Sciences facility (between 4th and 5th St)	COR	Directly adjacent to 4th St and 5th St workzone, but does not impact our workzone design	Design workzone to accommodate an increase in construction traffic, e.g. turning radii and construction entrances from our workzone to access that site		✓	✓		
Large-scale development occurring on the VCU MCV campus (Adult Outpatient Facility, Children's Hospital of Richmond, Parking Deck)	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii and temporary signal timing				✓	
Shockoe Valley Transportation Improvements	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii					✓
Shockoe Small Area Plan implementation	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii					✓
Shockoe Memorial Project	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii					✓
Large-scale private development at 18th/Oliver Hill Way	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii					✓
Proposed development on E. Main St.	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii					✓
National Slavery Museum at the Lumpkin's Slave Jail Site adjacent to parking for Main Street Station at 1500 E Main Street.	COR	No direct impact, however, additional construction traffic travel through the workzone	Design workzone to accommodate an increase in construction traffic, e.g. turning radii					✓



Transportation Management Plan Analysis

During the development of the TMP, AWC will analyze temporary traffic conditions along I-95 and each cross street per the requirements of IIM-LD-241.7. The purpose of the analysis is twofold, first, to verify the appropriate balance between traffic flow through the work zone and the ability to safely and efficiently perform the needed construction. The second is to develop the appropriate messaging to the public that is to be disseminated through the Public Communication Plan.

For lane closures proposed along I-95, data from five VDOT continuous count stations that are located in or near the project area will be used to populate analysis models in accordance with VDOT TOSAM to determine the impacts of closures. In some cases, the optimum time closures can be implemented to minimize impacts to traffic. This is especially important for slow roll operations that have some flexibility as to when they occur. Each phase and each location will be analyzed to establish the appropriate balance between traffic flow and construction. As such, this valuable information will be used to develop the Traffic Control Plan and will be included in the TMP as documentation.

AWC's Traffic Control Plan for each of the cross streets generally follows the MOT detailed in the RFP, which is supported by analysis provided with the RFP. If during the development of the Traffic Control Plan, there are features that are significantly different, a new analysis will be conducted following VDOT TOSAM to identify the impacts of those features, which will be documented in the TMP and distributed to the appropriate stakeholders for review.

The results of analyses will be the basis of determining the appropriate messaging to be disseminated as detailed in the Public Communication Plan part of the TMP.

Public Communication Plan

The Public Communication Plan in AWC's TMP describes the roles of AWC and the stakeholders in and the process of developing and disseminating messages to the public and motorists. These messages can be of two types, weekly lane closure coordination through LCAMS and messages that are intended to disseminate to the public because new traffic patterns, additional delays, or major phases changes are about to occur. Regular meetings up to weekly with stakeholders will be used to keep them informed of upcoming changes.

LCAMS is a weekly process that provides a collaborative method to plan and monitor projects, resolve conflicts, and exchange information about existing and scheduled activities across the region. When the planned closures are submitted, the program contains a conflict module to advise if there is already work scheduled in that area. AWC will be granted access after training, and the website is open to the public to view closures but not to see the specifics of each closure. This process will be documented in the TMP and disclose individuals responsible and their role in the process.

For scheduled events, AWC will communicate the upcoming work and anticipated impact to VDOT public relations personnel. VDOT public relations personnel will then distribute the appropriate message to stakeholders, such as the City of Richmond, GRTC, Richmond Police, and Virginia State Police. All public communications will be originated and distributed to the public, internally, or to appropriate audiences, as necessary by the VDOT public relations personnel. VDOT public relations personnel will determine the methods that will be used to communicate with affected audiences about the construction project, expected work zone impacts, and construction schedule. Stakeholder agencies can then distribute pertinent messages to the public, motorists, adjacent residents, and businesses, etc., in advance of construction, related to what to expect, when to expect it, and how they will be accommodated during construction. AWC will coordinate with the stakeholders during the development of the TMP to formalize the communication process and identify on an individual basis



who is responsible for the process and what their roles are. Similarly, a process will be included in the TMP for non-scheduled events and the dissemination of appropriate messages. AWC will also coordinate with stakeholders to establish this process and include it in the TMP.

Transportation Operations Plan

AWC's TMP will include a Transportation Operations Plan that documents the processes used in the event of an incident in the work zone. This plan includes:

1. Notification process to the Regional Transportation Operations Center (TOC)
2. Emergency response agencies contact list
3. Procedures to respond to traffic incidents in work zones
4. Notification process for incidents and related traffic delays (to Project Maintenance of Traffic Coordinator/Project Manager/Resident Administrator, District Work Zone Safety Coordinator/Regional Traffic Engineer, Regional Operations Manager and Public Affairs Manager, Regional Incident Management Coordinator)
5. Procedures to clear incidents and restore normal project traffic operations
6. Process to review incidents and potentially modify the Temporary Traffic Control Plan (TTCP) to reduce the frequency and severity of incidents

Incident Management procedures are area and situation-specific. All practices at incidents follow National Incident Management System (NIMS) guidelines. The implementation of the processes is the responsibility of the Site Manager.

4.5.3 DEMOLITION PLAN

Prior to the demolition of the bridge superstructures, we will complete the necessary adjustments to the impacted utilities (for further details, see Utilities section for utility impacts at each bridge). Utilities that are to be protected in place will be supported as specified in the utility design plans. Collectively, the five bridge sites have utilities that include buried communication, power, and water lines, as well as overhead utilities at 1st Street. Additionally, there is an overhead sign structure adjacent to the 7th Street bridge. In each of these cases, we understand the need for working safely while protecting the utilities during demolition. Crane placement utilizing timber matting will be key in keeping bearing pressures low enough to avoid damage to the existing utilities. Construction sequencing will also be closely coordinated to assist with protecting utilities while also maximizing space to place the cranes near each of the bridge on the local roads.

1st Street Bridge Approach to Demolition

Phase 1 Demolition – The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, is temporary road lane reduction to a one-lane, one-way movement across the bridge. The traffic will be shifted to eastern side of bridge while western side of the bridge is reconstructed.

Sequence of Construction for Phase 1 Demolition:

1. Provide temporary restriping of 1st Street, place traffic barrier service concrete, temporary traffic signal and shift traffic to the eastern side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within the limits shown on Figure 4.5.3-1.
5. Remove beam lines.
6. Reconstruct bridge superstructure.





Phase 2 Demolition – The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, is a temporary road lane reduction that will continue to be a one-lane, one-way movement across the bridge. The traffic will be shifted to the newly constructed western side of the bridge while the eastern side of the bridge is reconstructed.

Sequence of Construction for Phase 2 Demolition:

1. Provide temporary restriping of 1st Street, place traffic barrier service concrete, modify temporary traffic signal, as necessary, and shift traffic to the eastern side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within limits shown in Figure 4.5.3-1.
5. Remove beamlines.
6. Reconstruct bridge superstructure.

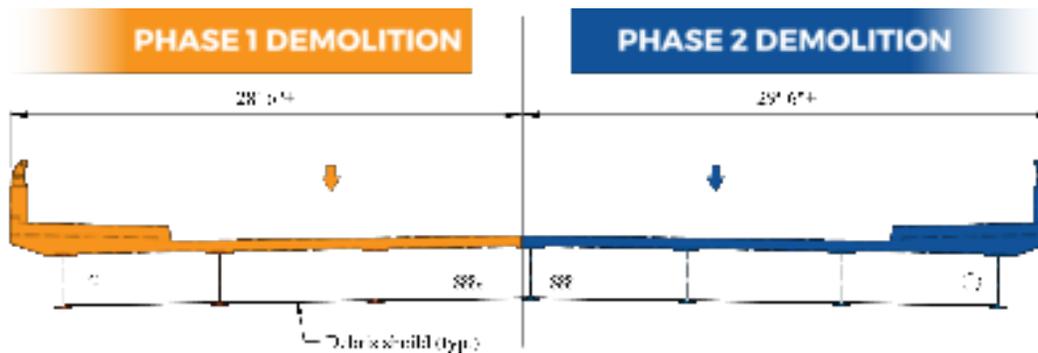


Figure 4.5.3-1

Critical demolition concerns and mitigation plans – AWC will ensure that the existing portion of the superstructure is not damaged during removal. AWC will install debris shield consisting of 3” timber lagging to protect the traffic traveling underneath bridge on I-95. Furthermore, lane closures will be conducted on I-95 in accordance with the Limitation of Operations to provide additional protection. AWC will perform 15-minute road closures, as permitted, when lifting the beams.

4th Street Bridge Approach to Demolition

Phase 1 Demolition – The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, will provide for traffic merging from two lanes in each direction to one lane in each direction. Northbound traffic will be shifted to the western side of the bridge while the eastern side of the bridge is reconstructed using a temporary paved travelway where the grass median is today.

Sequence of Construction for Phase 1 Demolition:

1. Install temporary paving, provide temporary restriping of 4th Street, place traffic barrier service concrete, and shift traffic to the western side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within limits shown in Figure 4.5.3-2.
5. Remove beamlines.
6. Reconstruct bridge superstructure

Phase 2 Demolition – The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, will provide for traffic merging from two lanes in each direction to one lane in each



direction. Southbound traffic will be shifted to the newly constructed eastern side of the bridge while the western side of the bridge is reconstructed using a temporary paved travelway where the grass median is today.

Sequence of Construction for Phase 2 Demolition:

1. Install temporary paving, provide temporary restriping of 4th Street, place traffic barrier service concrete, modify temporary traffic signal, as necessary, and shift traffic to the western side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within limits shown in Figure 4.5.3-2.
5. Remove beamlines.
6. Reconstruct bridge superstructure

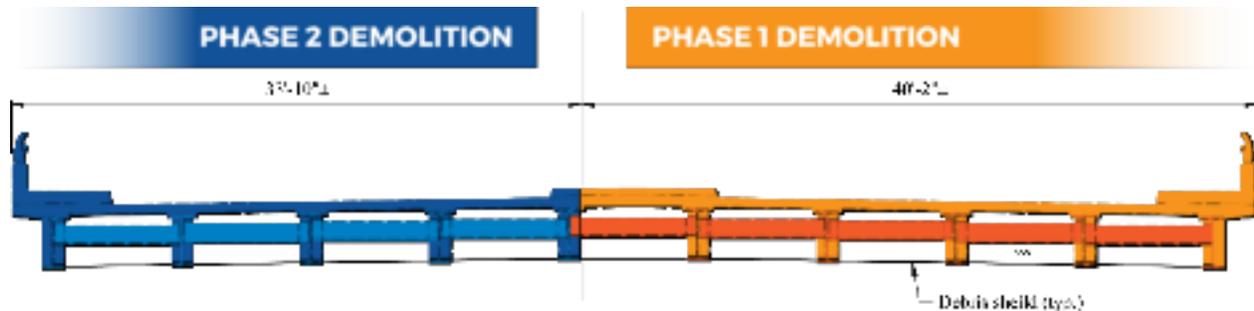


Figure 4.5.3-2

Critical demolition concerns and mitigation plans – AWC will ensure that the existing portion of the superstructure is not damaged during removal. AWC will install a debris shield consisting of 3” timber lagging to protect the traffic traveling underneath the bridge on I-95. Furthermore, lane closures will be conducted on I-95 in accordance with the Limitation of Operations to provide additional protection. AWC will perform 15-minutes road closures, as permitted when lifting the beams.

5th Street Bridge Approach to Demolition

Phase 1 Demolition – The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, will provide for traffic merging from two lanes to one prior to the N 5th Street bridge. The one lane of traffic will shift vehicles to the western side of the bridge while the eastern side of the bridge is reconstructed.

Sequence of Construction for Phase 1 Demolition:

1. Install temporary paving, provide temporary restriping of 5th Street, place traffic barrier service concrete, and shift traffic to the western side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within limits shown in Figure 4.5.3-3.
5. Remove beamlines.
6. Reconstruct bridge superstructure

Phase 2 Demolition – The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, will provide for traffic merging from two lanes to one prior to the N 5th Street bridge. The one lane of traffic will shift vehicles to the newly constructed eastern side of the bridge while the western side of bridge is reconstructed.



Sequence of Construction for Phase 2 Demolition:

1. Install temporary paving, provide temporary restriping of 5th Street, place traffic barrier service concrete, modify temporary traffic signal, as necessary, and shift traffic to the western side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within limits shown in Figure 4.5.3-3.
5. Remove beamlines.
6. Reconstruct bridge superstructure.

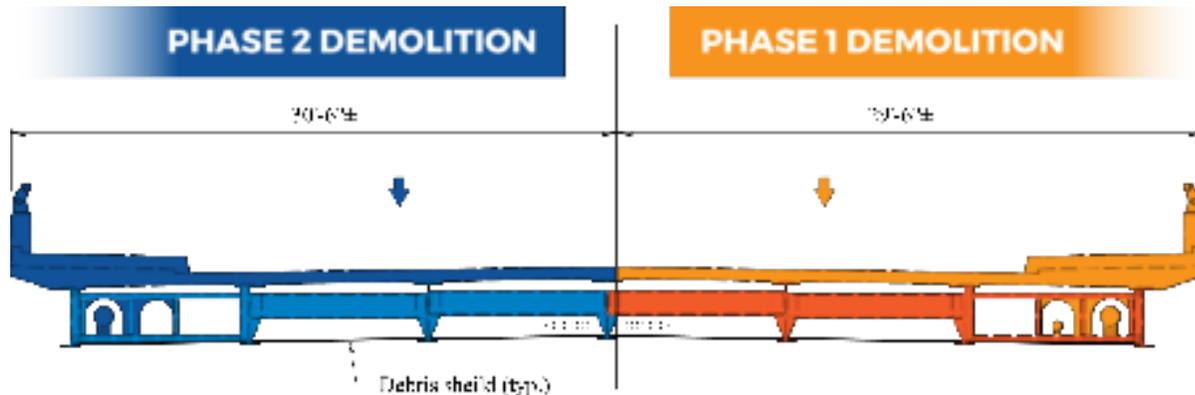


Figure 4.5.3-3

Critical demolition concerns and mitigation plans – AWC will ensure that the existing portion of the superstructure is not damaged during removal. AWC will install a debris shield consisting of 3” timber lagging to protect the traffic traveling underneath the bridge on I-95. Furthermore, lane closures will be conducted on I-95 in accordance with the Limitation of Operations to provide additional protection. AWC will perform 15-minutes road closures, as permitted when lifting the beams.

7th Street Bridge Approach to Demolition

Phase 1 Demolition – The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, will provide for closing the bridge to southbound movements coming into the city and the number of lanes going across the bridge will be reduced to two lanes going northbound. The reduced lanes will shift vehicles to the western side of the bridge while the eastern side of bridge is reconstructed.

Sequence of Construction for Phase 1 Demolition:

1. Provide temporary restriping of 7th Street, place traffic barrier service concrete, and shift traffic to the western side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within limits shown in Figure 4.5.3-4.
5. Remove beamlines.
6. Reconstruct bridge superstructure

Phase 2 Demolition - The MOT operation for this phase of construction, as fully explained in the Transportation Management plan section, will provide for closing the bridge to southbound movements coming into the city, and the number of lanes going across the bridge will be reduced to two lanes going northbound. The reduced lanes will shift vehicles to the newly constructed eastern side of the bridge while the western side of bridge is reconstructed.



Sequence of Construction for Phase 2 Demolition:

1. Provide temporary restriping of 7th Street, place traffic barrier service concrete, modify temporary traffic signal, as necessary, and shift traffic to the western side of the bridge.
2. Install debris shield to protect traffic traveling I-95 underneath.
3. Remove concrete barrier and fence.
4. Saw cut the existing concrete deck within limits shown in Figure 4.5.3-4.
5. Remove beamlines.
6. Reconstruct bridge superstructure.

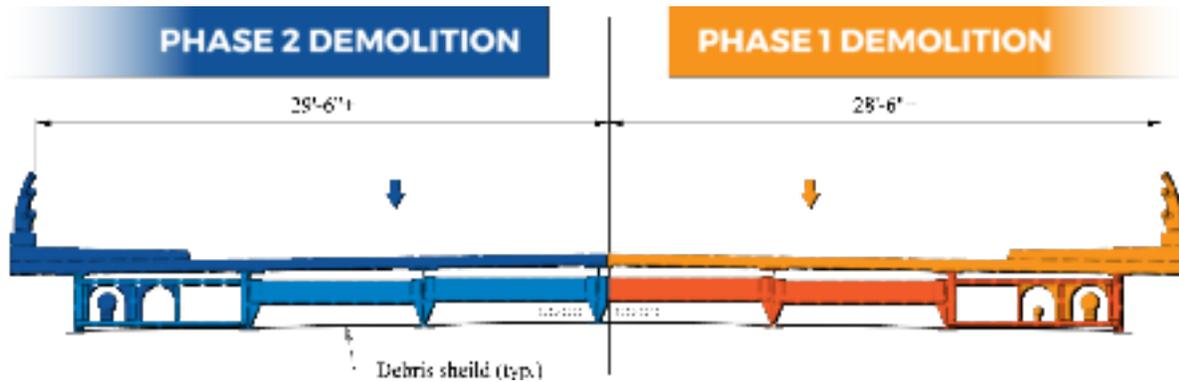


Figure 4.5.3-4

Critical demolition concerns and mitigation plans – AWC ensure that the existing portion of the superstructure is not damaged during removal. AWC will install a debris shield consisting of 3” timber lagging to protect the traffic traveling underneath the bridge on I-95. Furthermore, lane closures will be conducted on I-95 in accordance with the Limitation of Operations to provide additional protection. AWC will perform 15-minute road closures, as permitted when lifting the beams.

E. Broad Street Bridge Approach to Demolition

E. Broad Street bridge proposed to be closed on weekends to allow for Accelerated Bridge Construction. Complete bridge to be replaced over 8 weekends.

Sequence of Construction (performed during 8 weekends):

1. Demolish portion of the superstructure to the limits shown in the typical section and remove a portion of approach slab.
2. Install portion of superstructure.

Critical demolition concerns and mitigation plans – AWC will ensure that the existing girder is not damaged in the removal of the existing deck. AWC will ensure adequate existing deck is removed to allow for the placement of the adjacent PBU. Temporary cover plates will be installed between newly constructed bridge superstructure and existing deck. AWC will perform weekend lane shifts on I-95 using movable barriers to prevent vehicles from being underneath the bridges during rehabilitation activities.

4.6 Proposal Schedule





4.6 PROPOSAL SCHEDULE

The AWC Team has carefully reviewed the Project's schedule requirements and understands its complexities and interrelationships of its technical elements. As evidenced in our attached Proposal Schedule, we have considered internal and external plan reviews that are critical to a design-build success, permitting constraints, right-of-way acquisition, utility relocations, design and construction integration, maintenance of traffic constraints, and QA/QC inspection and testing hold points. Our Maintenance of Traffic plan is optimized to deliver the Project by the Contract Final Completion date of December 20, 2024, while minimizing impacts to the traveling public and providing worker and motorist safety.

Summary of Contractual and Schedule Milestones

Contractual & Schedule Milestones	Contractual	Projected
Contractual Notice of Intent to Award	9/29/2021	9/29/2021
CTB Approval / Notice to Award	10/20/2021	10/20/2021
Design-Build Contract Execution	11/03/2021	11/03/2021
Notice to Proceed	11/10/2021	11/10/2021
Scope Validation Period (120 Days)	3/9/2022	3/9/2022
Substantial Completion	10/21/2024	10/21/2024
Final Completion	12/20/2024	12/20/2024

Work Breakdown Structure

We have organized the CPM Schedule into a hierarchical Work Breakdown Structure (WBS) to adequately demonstrate the relationship and integration between the Contractual and Schedule Milestones, Design, Procurement, Utilities, Construction, and Closeout. The Level 1 WBS is highlighted below with a brief description. Selected Level 2 and Level 3 WBS details are also provided in the Construction WBS below.

- A. *Project Milestones:*** consists of contractual and schedule milestones as well as the 120-day scope validation period.
- B. *Project Management & Administration:*** Includes right-of-way coordination and acquisition; environmental and cultural resource approvals and permitting; public involvement/public relations; and QA/QC during design and construction.
- C. *Design:*** Includes design phase and utility coordination
 - Design Phase – includes QA/QC design reviews, field surveys, geotechnical investigations, roadway design, MOT design, utilities design, substructure design, and superstructure design. Activities inside the design phase plans include VDOT, City of Richmond, and FHWA reviews and approvals.
- D. *Procurement:*** includes shop drawing submittals and reviews and fabrication and delivery.
- E. *Construction:*** includes all aspects of roadway, drainage, barrier wall, and bridge superstructure replacement and rehabilitation. Also included are utility relocations (as applicable for each site) for VDOT, City of Richmond Gas, City of Richmond Water, City of Richmond Sewer, Dominion Power, Verizon, Comcast, Crown Castle. This section of the Schedule is further broken down in our WBS Structure by Mobilization, Substructure Repairs, Superstructure Replacement, Stage, Phase, and Work Type as described in the list below to provide schedule certainty and on-time completion of the Final





Completion while also allowing our operations team to focus on prosecuting the work efficiently and safely.

This section of the schedule is further broken down by Substructure Repairs, Superstructure Replacement, Stage, Phase, and Work Type as described in the list below to provide schedule certainty and on-time delivery of the Final Completion while allowing our operations team to focus on executing the work efficiently and safely.

Substructure Repairs

- 1st Street Bridge
- 4th Street Bridge
- E. Broad Street Bridge
- 5th Street Bridge
- 7th Street Bridge

Superstructure Repairs

- Stage I
 - 1st Street Bridge (2 Phases)
 - 4th Street Bridge (2 Phases)
 - E. Broad Street Bridge (Accelerated Bridge Construction)
- Stage II
 - 5th Street Bridge (2 Phases)
 - 7th Street Bridge (2 Phases)

F. *Closeout:* includes final inspections, punch list, and closeout documents.

In addition to our Schedule being comprehensive of all elements required on a design-build project, it also correctly accounts for the ability to overlap activities, realizing the full benefit of design-build project delivery. The following provides a summary of how different phases of the Project will be sequenced to provide the most significant benefit to the Schedule:

1. *Design:* Design will commence immediately upon Notice to Proceed. Preliminary design development will coincide with field surveys and environmental investigations. Field surveys will recover control used for the RFP conceptual plan development. All new aerial mapping, field surveys, and investigations will align with design efforts already completed during the proposal development phase, eliminating any need to recreate design details. Design plans will be prepared in separate packages for roadway and bridge elements. Following the submission of approximately 60% roadway plans, all comments related to right-of-way acquisitions will be addressed to enable approval of right-of-way acquisition plans in advance of construction plan approval. This will facilitate the earliest completion of right-of-way acquisition efforts. An advance package for substructure repairs will be prepared to allow repairs to commence while the superstructure replacement plans are finalized.

2. *Utility Coordination:* Extensive efforts have been initiated to avoid utility relocations as much as possible, and these efforts have already enabled us to avoid impacts to multiple utilities located within the project limits. With this effort, we will be able to coordinate with the utility companies early during the design phase to develop relocation plans and seek approval from VDOT for relocation efforts to commence prior to right-of-way and easements being acquired. This will help to shift the utility relocation efforts off the Project's critical path and move facilities before bridge reconstruction commence.





3. Quality Assurance/Quality Control for Design and Construction: starts from NTP and occurs throughout both design and construction phases.

4. Environmental Compliance: Environmental compliance efforts will begin during the design phase to allow the construction activities commence as planned.

5. Public Involvement: Public involvement will occur throughout both design and construction phases, and will include formal outreach efforts such as “Pardon our Dust” meetings as well as regular communication with VDOT, third party stakeholders, and property owners as the right-of-way acquisition phase is underway.

6. Construction: As the longest portion of a design-build project, all efforts have been and will continue to be made by our Team to begin construction as soon as possible. Separate development and early approval of an early substructure repair package will allow construction to begin while final design continues.

WBS Structure for the Project

WBS Code	WBS Name
C00111300DB107_PROP-3	VDOT Bridges Over I-95 Superstructure Replacement Bundling - Proposal Schedule 8.7.21
C00111300DB107_PROP-3.1	Project Milestones
C00111300DB107_PROP-3.2	Project Management & Admin
C00111300DB107_PROP-3.3	Design
C00111300DB107_PROP-3.3.1	1st Street Design
C00111300DB107_PROP-3.3.1.1	1st Street Design - Stage 1
C00111300DB107_PROP-3.3.1.2	1st Street Design - Stage 2
C00111300DB107_PROP-3.3.1.2.1	1st Street Design - Stage 2 - Substructure Repair
C00111300DB107_PROP-3.3.1.3	1st Street Design - AFC
C00111300DB107_PROP-3.3.1.3.1	1st Street Design - AFC - Substructure Repair
C00111300DB107_PROP-3.3.2	4th Street Design
C00111300DB107_PROP-3.3.2.1	4th Street Design - Stage 1
C00111300DB107_PROP-3.3.2.2	4th Street Design - Stage 2
C00111300DB107_PROP-3.3.2.2.1	4th Street Design - Stage 2 - Substructure Repair
C00111300DB107_PROP-3.3.2.3	4th Street Design - AFC
C00111300DB107_PROP-3.3.2.3.1	4th Street Design - AFC - Substructure Repair
C00111300DB107_PROP-3.3.3	Broad Street Design
C00111300DB107_PROP-3.3.3.1	Broad Street Design - Stage 1
C00111300DB107_PROP-3.3.3.2	Broad Street Design - Stage 2
C00111300DB107_PROP-3.3.3.2.1	Broad Street Design - Stage 2 - Substructure Repair
C00111300DB107_PROP-3.3.3.3	Broad Street Design - AFC
C00111300DB107_PROP-3.3.3.3.1	Broad Street Design - AFC - Substructure Repair
C00111300DB107_PROP-3.3.4	5th Street Design
C00111300DB107_PROP-3.3.4.1	5th Street Design - Stage 1
C00111300DB107_PROP-3.3.4.2	5th Street Design - Stage 2
C00111300DB107_PROP-3.3.4.2.1	5th Street Design - Stage 2 - Substructure Repair
C00111300DB107_PROP-3.3.4.3	5th Street Design - AFC
C00111300DB107_PROP-3.3.4.3.1	5th Street Design - AFC - Substructure Repair
C00111300DB107_PROP-3.3.5	7th Street Design



WBS Code	WBS Name
C00111300DB107_PROP-3.3.5.1	7th Street Design - Stage 1
C00111300DB107_PROP-3.3.5.2	7th Street Design - Stage 2
C00111300DB107_PROP-3.3.5.2.1	7th Street Design - Stage 2 - Substructure Repair
C00111300DB107_PROP-3.3.5.3	7th Street Design - AFC
C00111300DB107_PROP-3.3.5.3.1	7th Street Design - AFC - Substructure Repair
C00111300DB107_PROP-3.3.6	Utility Coordination
C00111300DB107_PROP-3.4	Construction
C00111300DB107_PROP-3.4.1	Mobilization
C00111300DB107_PROP-3.4.2	Substructure Repairs
C00111300DB107_PROP-3.4.2.1	Substructure Repairs - 1st Street Bridge
C00111300DB107_PROP-3.4.2.1.1	1st Street Bridge Abutment A
C00111300DB107_PROP-3.4.2.1.2	1st Street Bridge Pier 1
C00111300DB107_PROP-3.4.2.1.3	1st Street Bridge Pier 2
C00111300DB107_PROP-3.4.2.1.4	1st Street Bridge Pier 3
C00111300DB107_PROP-3.4.2.1.5	1st Street Bridge Abutment B
C00111300DB107_PROP-3.4.2.2	Substructure Repairs - 4th Street Bridge
C00111300DB107_PROP-3.4.2.2.1	4th Street Bridge Abutment A
C00111300DB107_PROP-3.4.2.2.2	4th Street Bridge Pier 1
C00111300DB107_PROP-3.4.2.2.3	4th Street Bridge Abutment B
C00111300DB107_PROP-3.4.2.3	Substructure Repairs - Broad Street Bridge
C00111300DB107_PROP-3.4.2.3.1	Broad Street Bridge Abutment A
C00111300DB107_PROP-3.4.2.3.2	Broad Street Bridge Pier 1
C00111300DB107_PROP-3.4.2.3.3	Broad Street Bridge Abutment B
C00111300DB107_PROP-3.4.2.4	Substructure Repairs - 5th Street Bridge
C00111300DB107_PROP-3.4.2.4.1	5th Street Bridge Abutment A
C00111300DB107_PROP-3.4.2.4.2	5th Street Bridge Pier 1
C00111300DB107_PROP-3.4.2.4.3	5th Street Bridge Pier 2
C00111300DB107_PROP-3.4.2.4.4	5th Street Bridge Pier 3
C00111300DB107_PROP-3.4.2.4.5	5th Street Bridge Abutment B
C00111300DB107_PROP-3.4.2.5	Substructure Repairs - 7th Street Bridge
C00111300DB107_PROP-3.4.2.5.1	7th Street Bridge Abutment A
C00111300DB107_PROP-3.4.2.5.2	7th Street Bridge Pier 1
C00111300DB107_PROP-3.4.2.5.3	7th Street Bridge Pier 2
C00111300DB107_PROP-3.4.2.5.4	7th Street Bridge Pier 3
C00111300DB107_PROP-3.4.2.5.5	7th Street Bridge Pier 4
C00111300DB107_PROP-3.4.2.5.6	7th Street Bridge Abutment B
C00111300DB107_PROP-3.4.3	Superstructure Repairs
C00111300DB107_PROP-3.4.3.1	Stage I Superstructure Repairs
C00111300DB107_PROP-3.4.3.1.1	1st Street Bridge Super Structure Repairs
C00111300DB107_PROP-3.4.3.1.1.1	1st Street Utility Relocations
C00111300DB107_PROP-3.4.3.1.1.2	1st Street Bridge Phase 1
C00111300DB107_PROP-3.4.3.1.1.3	1st Street Bridge Phase 2
C00111300DB107_PROP-3.4.3.1.2	4th Street Bridge Super Structure Repairs



WBS Code	WBS Name
C00111300DB107_PROP-3.4.3.1.2.1	4th Street Utility Relocations
C00111300DB107_PROP-3.4.3.1.2.2	4th Street Bridge Phase 1
C00111300DB107_PROP-3.4.3.1.2.3	4th Street Bridge Phase 2
C00111300DB107_PROP-3.4.3.1.3	Broad Street Bridge Super Structure Repairs
C00111300DB107_PROP-3.4.3.1.3.1	Broad Street Utility Relocations
C00111300DB107_PROP-3.4.3.1.3.2	Broad Street Bridge Phase 1
C00111300DB107_PROP-3.4.3.1.3.2.1	Broad Street Bridge Phase 1A
C00111300DB107_PROP-3.4.3.1.3.2.2	Broad Street Bridge Phase 1B
C00111300DB107_PROP-3.4.3.1.3.2.3	Broad Street Bridge Phase 1C
C00111300DB107_PROP-3.4.3.1.3.2.4	Broad Street Bridge Phase 1D
C00111300DB107_PROP-3.4.3.1.3.3	Broad Street Bridge Phase 2
C00111300DB107_PROP-3.4.3.1.3.3.1	Broad Street Bridge Phase 2A
C00111300DB107_PROP-3.4.3.1.3.3.2	Broad Street Bridge Phase 2B
C00111300DB107_PROP-3.4.3.1.3.3.3	Broad Street Bridge Phase 2C
C00111300DB107_PROP-3.4.3.1.3.3.4	Broad Street Bridge Phase 2D
C00111300DB107_PROP-3.4.3.1.3.4	Broad Street Bridge Roadway
C00111300DB107_PROP-3.4.3.2	Stage II Superstructure Repairs
C00111300DB107_PROP-3.4.3.2.1	5th Street Bridge Super Structure Repairs
C00111300DB107_PROP-3.4.3.2.1.1	5th Street Utility Relocations
C00111300DB107_PROP-3.4.3.2.1.2	5th Street Bridge Phase 1
C00111300DB107_PROP-3.4.3.2.1.3	5th Street Bridge Phase 2
C00111300DB107_PROP-3.4.3.2.2	7th Street Bridge Super Structure Repairs
C00111300DB107_PROP-3.4.3.2.2.1	7th Street Utility Relocations
C00111300DB107_PROP-3.4.3.2.2.2	7th Street Bridge Phase 1
C00111300DB107_PROP-3.4.3.2.2.3	7th Street Bridge Phase 2
C00111300DB107_PROP-3.5	Closeout

Overall Geography & Sequencing

The Schedule is divided into the five bridge sites. Each bridge site reconstruction is sequenced as outlined in the WBS. The five bridge reconstructions have been phased with the following constraints:

- Reconstruction of the 7th Street and E. Broad Street bridges shall not occur simultaneously during the construction project.
- Reconstruction of the 7th Street and 4th Street bridges shall not occur simultaneously during the construction project.

Critical Path

The critical path of the project begins with the 1st Street Bridge Stage 1 Design (TS&L) followed by the 1st Street Substructure Repair design. Upon completion of the 1st Street Substructure design the critical path continues through 1st Street substructure repairs. The critical path continues through 1st Street Phase I utility relocations and superstructure replacement followed by 1st Street Phase II superstructure replacement. The critical path continues through 5th Street Phase I and Phase II superstructure replacement. The critical path concludes with final punch list and closeout documents.





Calendars

I-95 Bridges 7-Day Calendar – Seven-day calendar with no days blocked out. This calendar is assigned to milestones and VDOT review activities.

I-95 Bridges 5-Day Calendar – Based on five days per week with Saturdays, Sundays, New Year’s Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, and Christmas Day blocked out as non-workdays. This calendar is assigned to design, administrative, and procurement activities.

I-95 Bridges 5-Day Weather Calendar – Based on five days per week with Saturdays, Sundays, and holidays blocked out as non-workdays. Additionally, the monthly average number of anticipated inclement weather days based on NOAA data are blocked out as non-workdays. The anticipated inclement weather days are shown in the table below. This calendar is assigned to construction activities.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4	4	4	3	4	4	4	4	3	4	3	4

I-95 Bridges Weekend Calendar – This calendar is based on 24 hours per day starting Fridays at 8:00pm through Monday at 6:00am. This aligns with the allowed road closures for the E. Broad Street bridge. Specified holiday weekends are blocked out as non-workdays. This calendar is assigned to E. Broad Street bridge activities.

Key Schedule Assumptions

- The Schedule is based on an NTP issued on or before November 10, 2021.
- Third-Party Utility companies will coordinate, cooperate, and perform their work as shown in our Schedule.
- There are no hazardous materials, threatened or endangered species, or other environmental constraints not identified in the RFP.
- Crews are primarily based on an 8-hour, five-day-per-week schedule with weather and holidays accounted for as discussed above in the calendars section.
- E. Broad Street Bridge Superstructure will be reconstructed over a period of 8 weekends, assuming multiple crews working throughout the weekend.
- Finish-Start relationships are used as much as possible to facilitate logical flow through the Schedule.
- Quantities and anticipated crew productivity have been input into most Schedule activities.

Acknowledgement of RFP, Revisions, and/or Addenda



ATTACHMENT 3.7**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**RFP NO. C00111300DB107PROJECT: VDOT Bridges Over I-95 Bundling**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 3.6, 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 7, 2021
(Date)
2. Cover letter of RFP Addendum No. 1 – May 14, 2021
(Date)
3. Cover letter of RFP Addendum No. 2 – June 11, 2021
(Date)
4. Cover letter of RFP Addendum No. 3 – August 9, 2021
(Date)
4. Cover letter of RFP Addendum No. 4 – August 25, 2021
(Date)



SIGNATURE

August 26, 2021

DATE

EJ O'Neill

PRINTED NAME

Vice President

TITLE



Appendix



ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this “Agreement”) is made and entered into as of this ____ day of _____, 2021, by and between the Virginia Department of Transportation (“VDOT”), and Archer Western Construction, LLC (“Offeror”).

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”) pursuant to VDOT’s December 15, 2020 Request for Qualifications (“RFQ”) and was invited to submit proposals in response to a Request for Proposals (“RFP”) for the VDOT Bridges Over I-95 Superstructure Replacement and Rehabilitation Bundling, Contract ID No. C00111300DB107 (“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 **fifty thousand and 00/100 Dollars (\$50,000.00)** ("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.

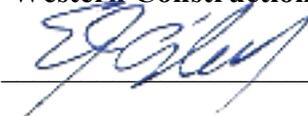
VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

Archer Western Construction, LLC

By:  _____

Name: EJ O'Neill

Title: Vice President

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project: VDOT Bridges Over I-95 Superstructure Replacement
and Rehabilitation Bundling
Contract ID No.: C00111300DB107

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.

	08/18/2021	Vice President
Signature	Date	Title

Archer Western Construction, LLC
Name of Firm

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

Project: VDOT Bridges Over I-95 Superstructure Replacement
and Rehabilitation Bundling
Contract ID No.: C00111300DB107

- 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 18, 2021
Date

Vice President,
Senior Director/Local Business Leader

Title

WSP USA Inc.
Name of Firm

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

Project: VDOT Bridges Over I-95 Superstructure Replacement
and Rehabilitation Bundling
Contract ID No.: C00111300DB107

- 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	<u>August 18, 2021</u> _____ Date	<u>Vice President</u> _____ Title
--	---	---

H & B Surveying and Mapping , LLC

Name of Firm

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

Project: VDOT Bridges Over I-95 Superstructure Replacement
and Rehabilitation Bundling
Contract ID No.: C00111300DB107

- 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.

	8/18/2021	Vice President, Transportation Services Leader
Signature	Date	Title

MBP

Name of Firm

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

Project: VDOT Bridges Over I-95 Superstructure Replacement
and Rehabilitation Bundling
Contract ID No.: C00111300DB107

- 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 18, 2021
Date

Chief Visionary Officer
Title

McCormick Taylor, Inc.
Name of Firm

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

Project: VDOT Bridges Over I-95 Superstructure Replacement
and Rehabilitation Bundling
Contract ID No.: C00111300DB107

- 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	<u>August 18, 2021</u> Date	<u>President</u> Title
--	--------------------------------	---------------------------

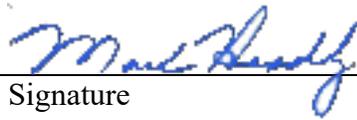
O. R. Colan Associates, LLC
Name of Firm

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

Project: VDOT Bridges Over I-95 Superstructure Replacement
and Rehabilitation Bundling
Contract ID No.: C00111300DB107

- 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 18, 2021
Date

Operations Manager
Title

Wetland Studies and Solutions, Inc.
Name of Firm

VDOT Bridges Over I-95 Superstructure Replacement and Rehabilitation Bundling

UPC 111300 (U000-127-023, P101, R201, C501, B601; STP-5A27(802)); UPC 111294 (0064-127-022, P101, B661; NHPP-064-3(510));
UPC 113375 (0250-127-050, P101, R201, C501; NHPP-BR04(307)); UPC 113388 (0004-127-051, P101, R201, C501; NHPP-BR04(308));
UPC 118484 (9999-127-107, P101, R202, C501, B602; NHPP-5A27(784))
Contract ID Number: C0011300DB107



Roadway Plans

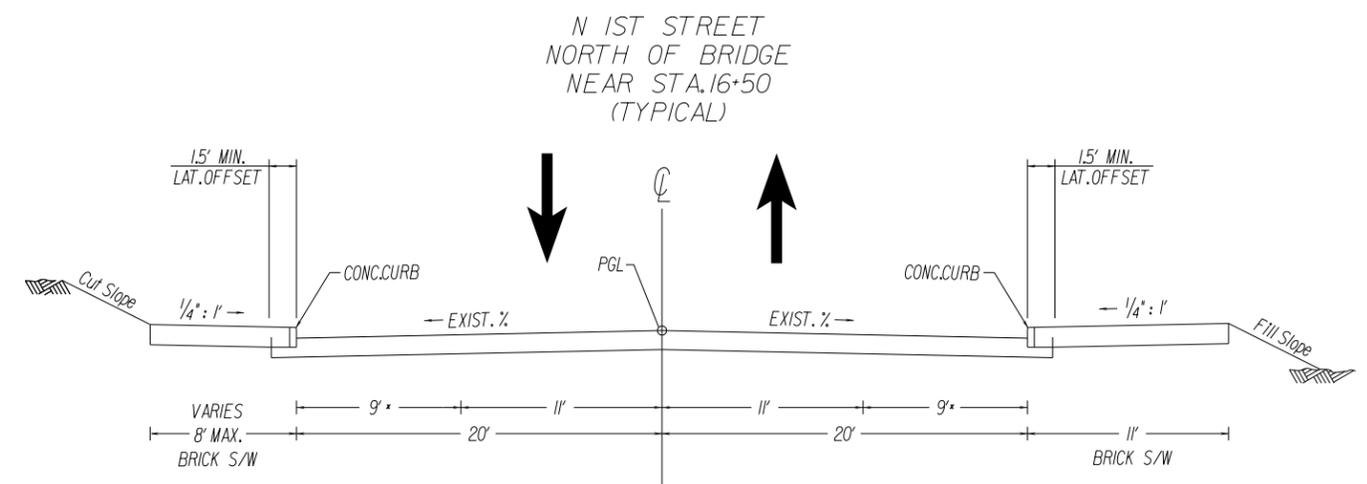
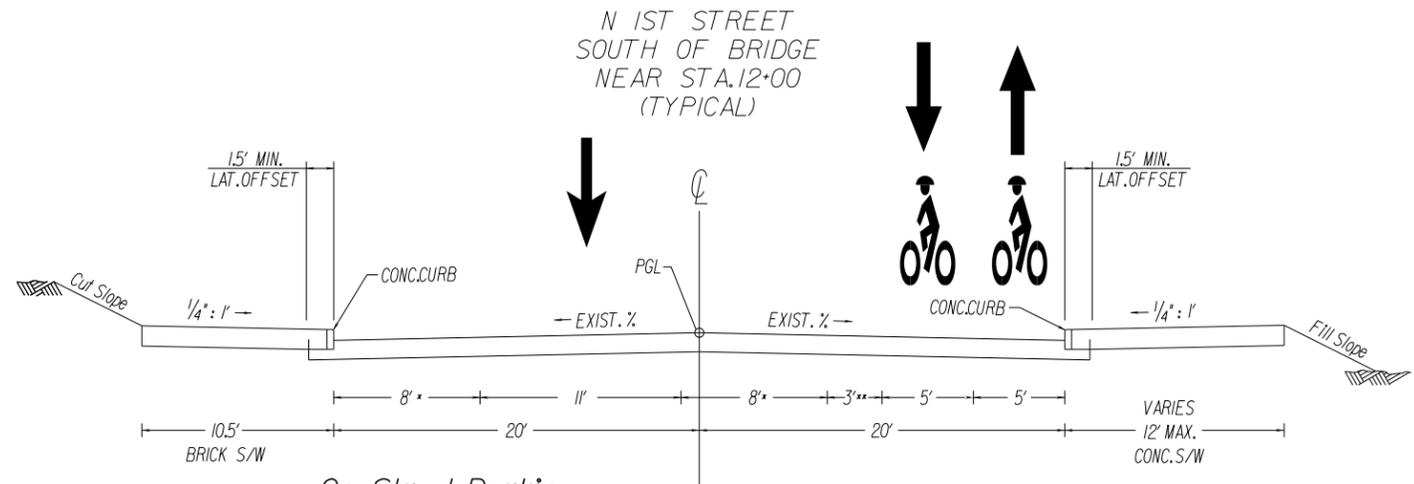


PROJECT MANAGER Anthony Havelly, P.E. (804) 603-5225
 SURVEYED BY DATE Woodport, Inc. (804) 774-2000 5/8/2020
 DESIGN BY WSP USA, Inc. (757) 466-1732
 SUBSURFACE UTILITY BY DATE AccuMark, Inc. (804) 550-7740 4/3/2020

TYPICAL SECTIONS

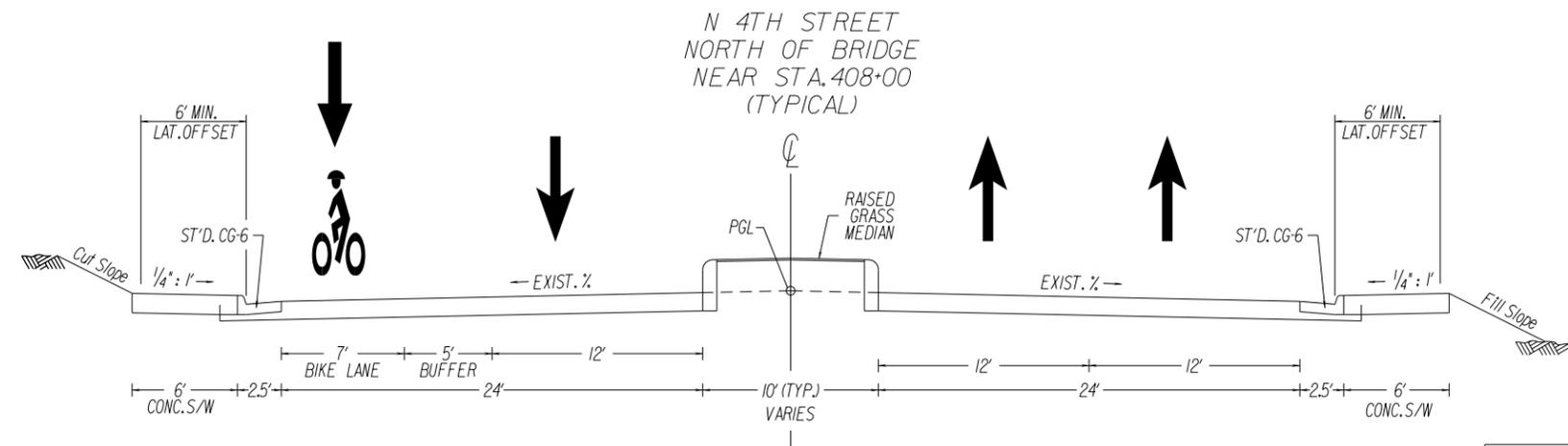
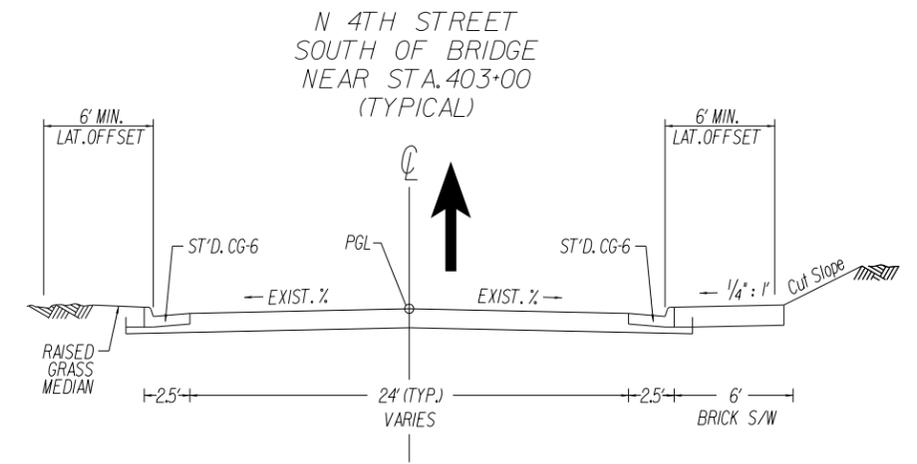
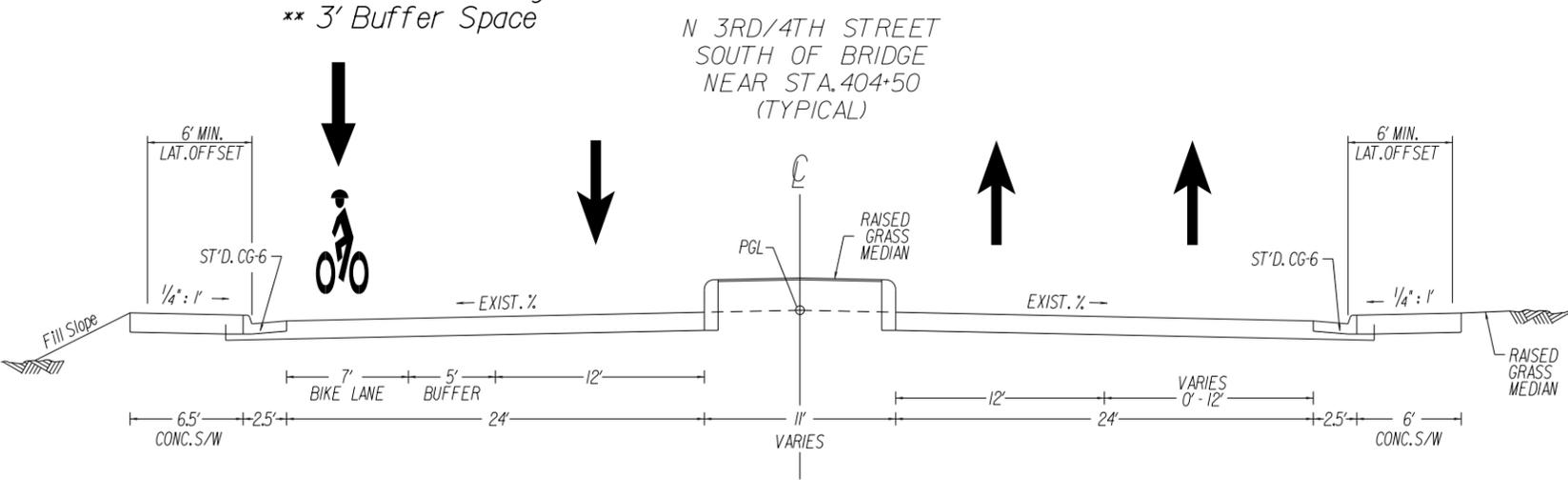
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



* On Street Parking
 ** 3' Buffer Space

* On Street Parking



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.

NOT TO SCALE	PROJECT U000-127-023 0064-127-022 0250-127-050 0004-127-051 9999-127-107	SHEET NO. 2A(1)
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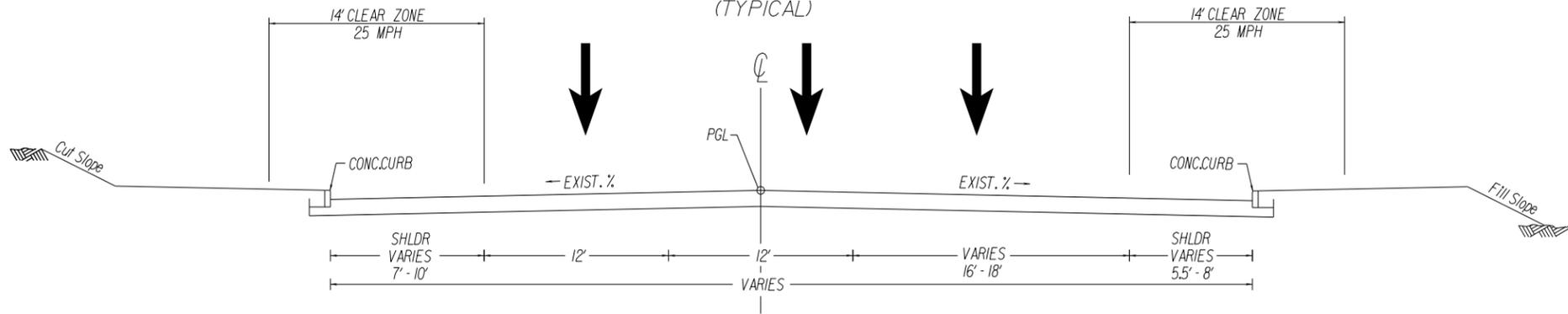
2-AUG-2021 17.37

PROJECT MANAGER *Anthony Havelly, P.E., (804) 603-5225*
 SURVEYED BY, DATE *Woodpeck, Inc. (804) 774-2000 5/8/2020*
 DESIGN BY *WSP, USA, Inc. (757) 466-1732*
 SUBSURFACE UTILITY BY, DATE *Accumark, Inc. (804) 550-7740 4/3/2020*

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	95		U000-127-023, C501 0004-127-051, C501 0064-127-022, C501 9999-127-107, C501 0250-127-050, C501	2A(2)

TYPICAL SECTIONS

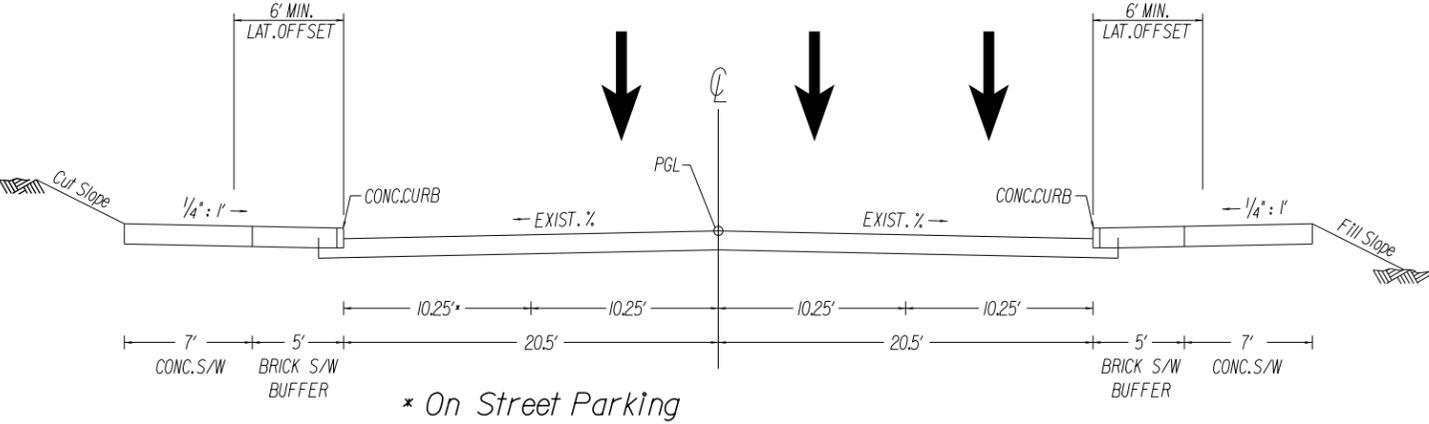
N 5TH STREET
SOUTH OF BRIDGE
NEAR STA. 53+00
(TYPICAL)



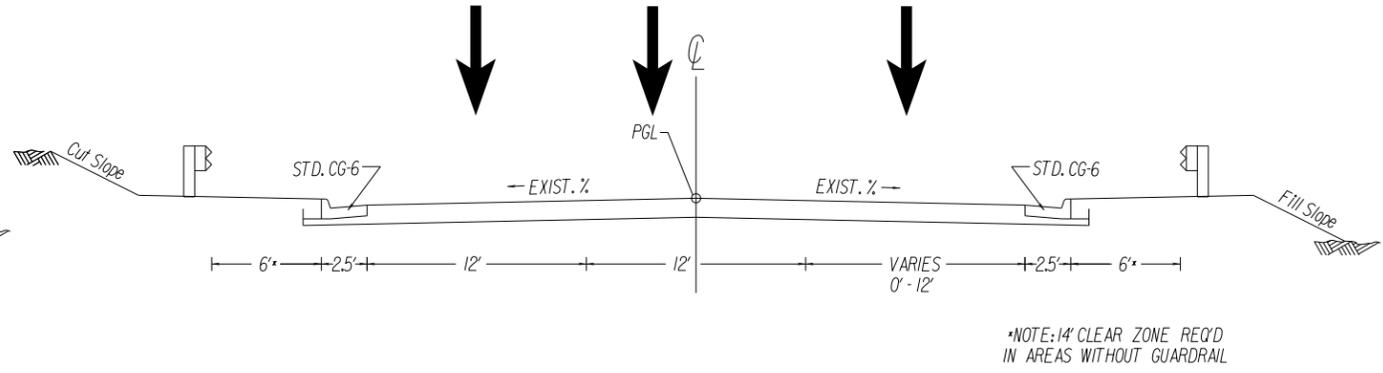
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

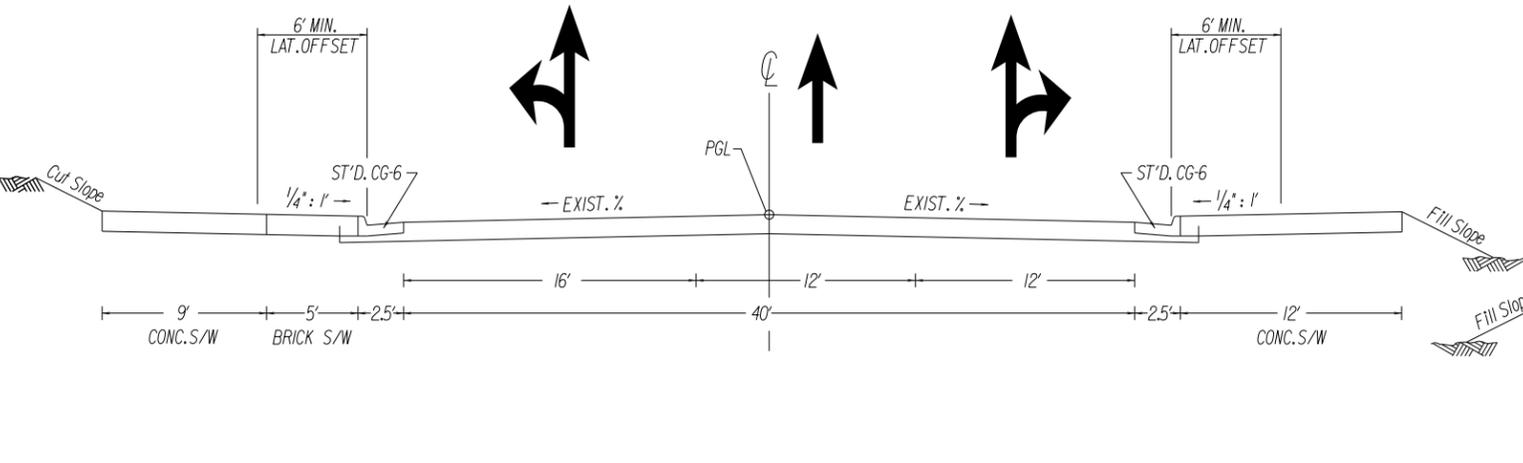
N 5TH STREET
SOUTH OF BRIDGE
NEAR STA. 52+50
(TYPICAL)



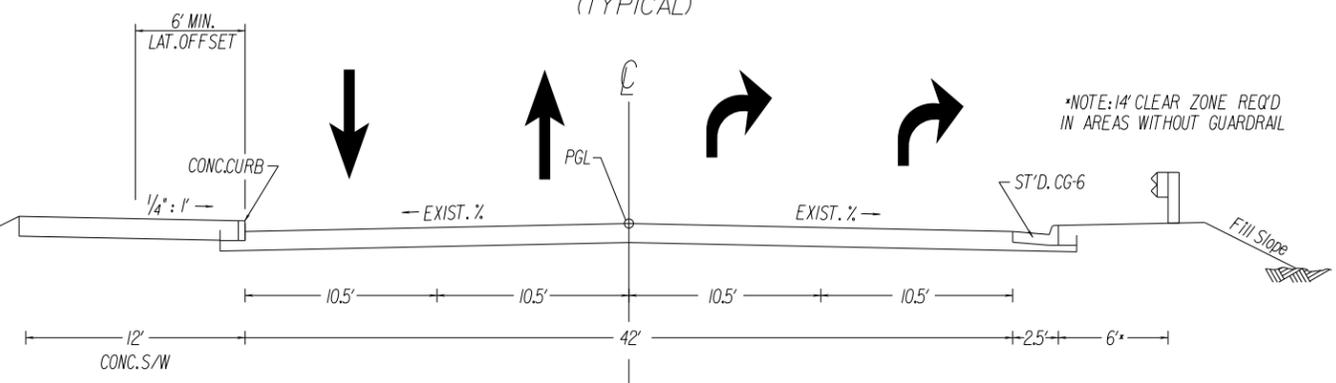
N 5TH STREET
NORTH OF BRIDGE
NEAR STA. 56+00
(TYPICAL)



N 7TH STREET
SOUTH OF BRIDGE
NEAR STA. 701+25
(TYPICAL)



N 7TH STREET
NORTH OF BRIDGE
NEAR STA. 706+00
(TYPICAL)



NOT TO SCALE	PROJECT	SHEET NO.
U000-127-023 0004-127-051	0064-127-022 9999-127-107 0250-127-050	2A(2)

2-AUG-2021 17:25

PROJECT MANAGER *Anthony Havelly, P.E.* (804) 603-5225
 SURVEYED BY, DATE *Woodpeck, Inc.* (804) 774-2000 5/8/2020
 DESIGN BY *WSP USA, Inc.* (757) 466-1732
 SUBSURFACE UTILITY BY, DATE *Accumark, Inc.* (804) 550-7740 4/3/2020

TYPICAL SECTIONS

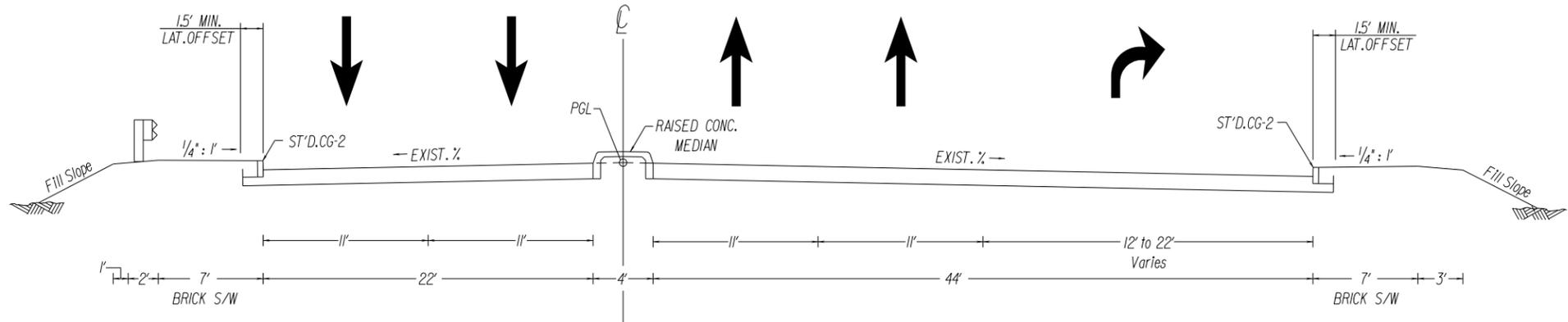
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	VA.	95	U000-127-023, C501 0004-127-051, C501 0064-127-022, C501 9999-127-107, C501 0250-127-050, C501	2A(3)

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

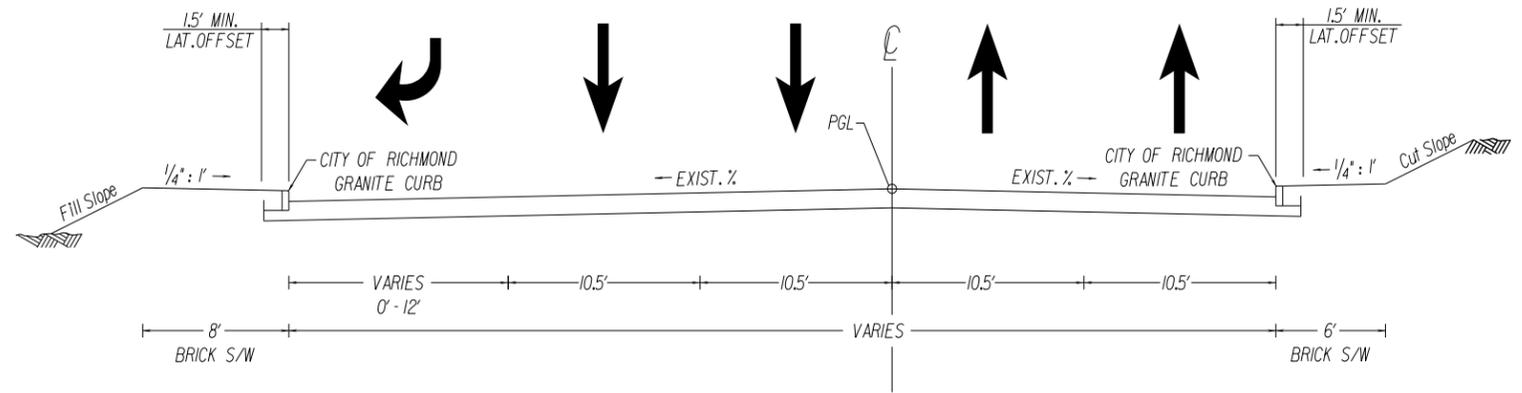
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

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

E BROAD STREET
 WEST OF BRIDGE
 NEAR STA. 803+50
 (TYPICAL)



E BROAD STREET
 EAST OF BRIDGE
 NEAR STA. 806+50
 (TYPICAL)



LEGEND

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	95	U000-127-023, C501 0004-127-051, C501 0064-127-022, C501 9999-127-107, C501 0250-127-050, C501	2B

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

Legend	
	Proposed Planing and Resurfacing
	Proposed Concrete Sidewalk Reconstruction
	Proposed Raised Grass Median Reconstruction
	Proposed Raised Concrete Median Reconstruction
	Proposed Brick Sidewalk Reconstruction
	Proposed Full Depth Pavement
	Demolition of Pavement
	Proposed Bridge Rehabilitation
	Proposed Bridge Approach Slab
	Proposed Parapet Wall
	Demo and Replace Raised Median
	VDOT STD Curb/Curb & Gutter
	Richmond STD Curb/Curb & Gutter
	Remove and Reset Guardrail
	Demo and Replace Barrier Wall
	Existing VDOT Drainage Structure
	Existing City of Richmond Drainage Structure
	VDOT STD GR-FOA-5
	Special Design Fixed Object Attachment
	VDOT STD GR-MGS1
	VDOT STD GR-MGS2
	VDOT STD GR-MGS3
	Special Design Barrier Wall w/ CPSR-1 Terminal Wall Shape
	VDOT STD GR-2
	VDOT STD GR-9
	VDOT STD MGS4
	Existing Streetlight & Power Pole to be Removed/Relocated by Others
	Ped. Ramp to be Reconst. Per VDOT STD CG-12
	Potential SWM Device Location
	Proposed Limits of Construction - Cut
	Proposed Limits of Construction - Fill

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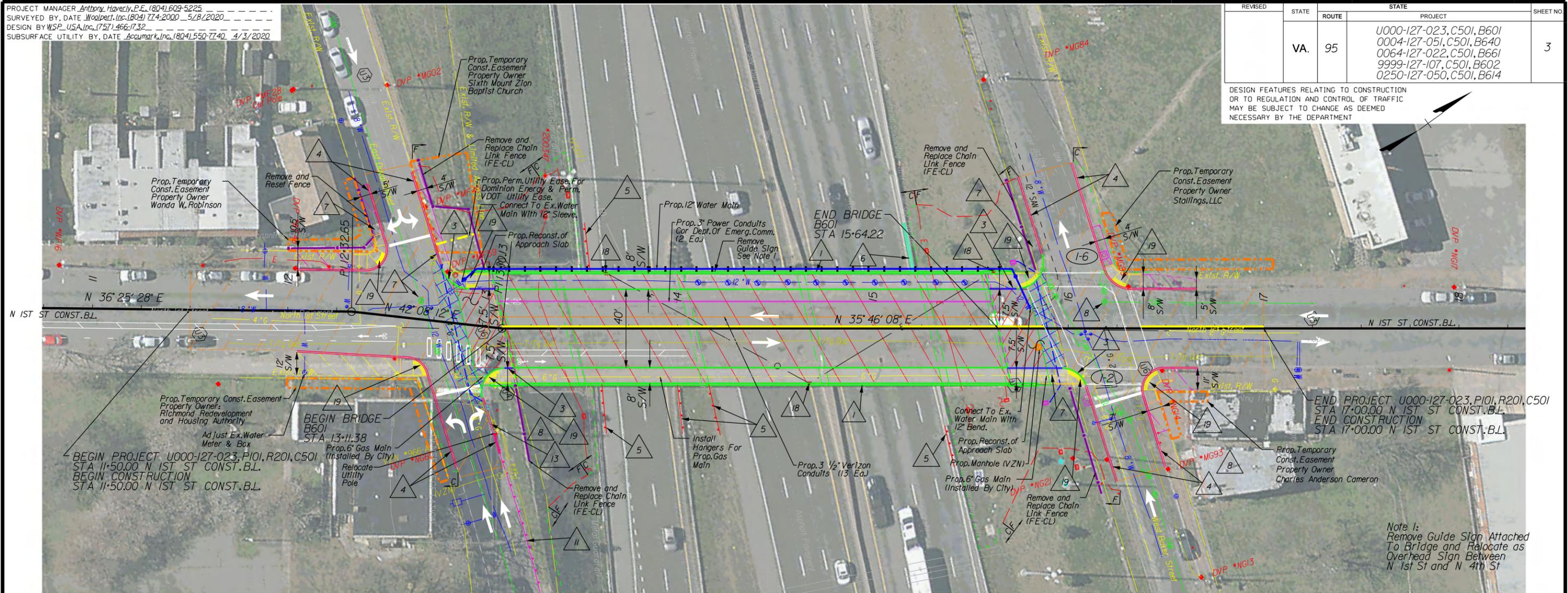
25-AUG-2021 09:11

PROJECT	SHEET NO.
U000-127-023 0064-127-022 0250-127-050 0004-127-051 9999-127-107	2B

PROJECT MANAGER Anthony Haverly, P.E. (804) 603-5225
 SURVEYED BY DATE Woodpeck, Inc. (804) 774-2000 5/8/2020
 DESIGN BY WSP_USA, Inc. (757) 466-1732
 SUBSURFACE UTILITY BY DATE Accumark, Inc. (804) 550-7740 4/3/2020

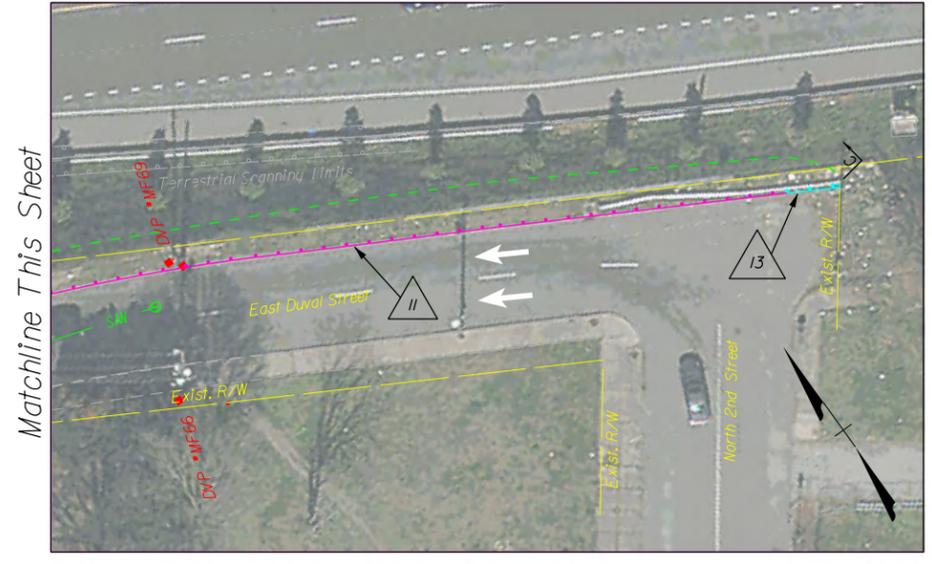
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



Matchline See Inset A

INSET A



Matchline This Sheet

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

REFERENCES	
Typical Section	2A(1), 2A(4)
Legend	2B
Profile	3A



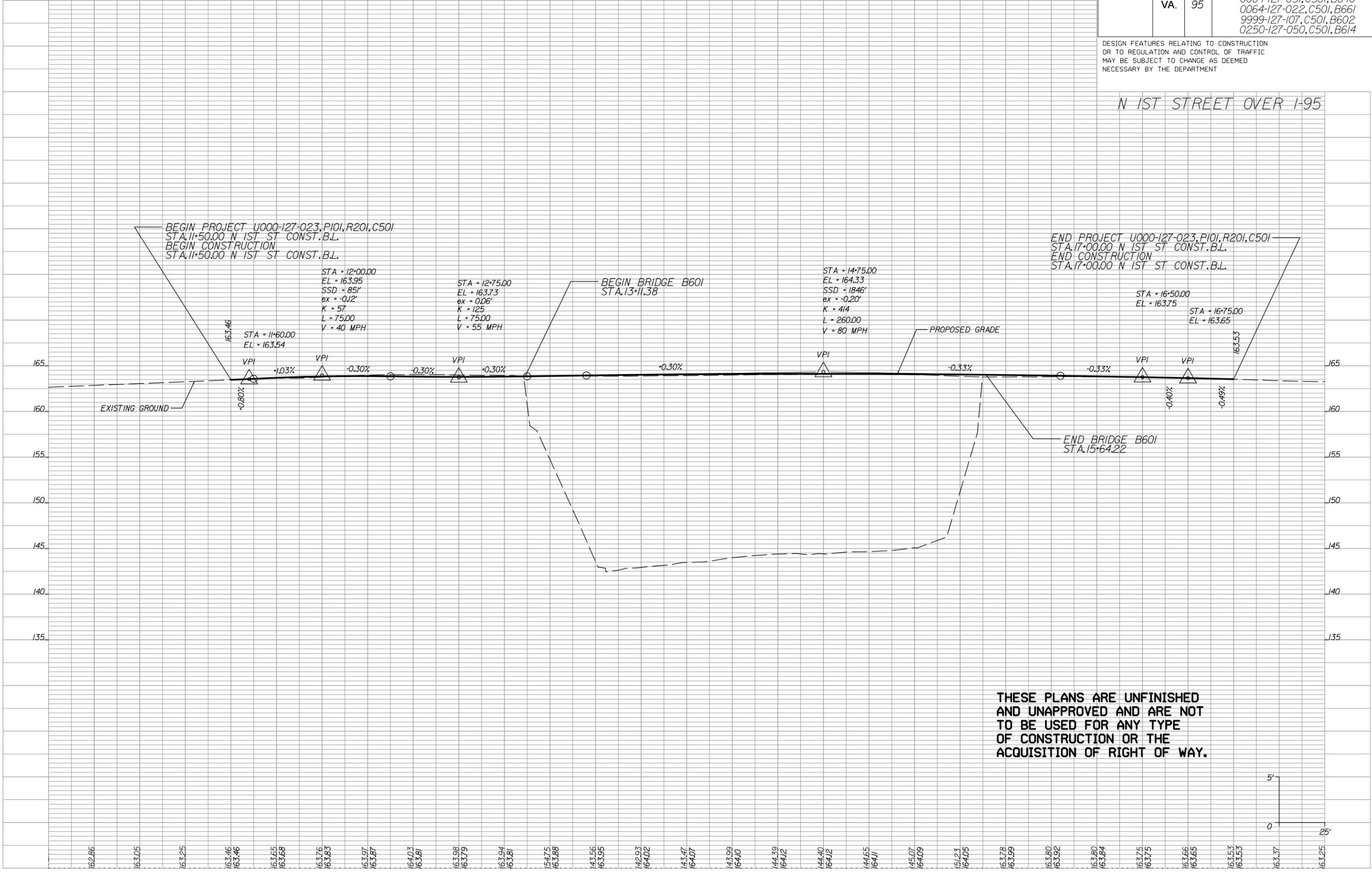
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PROJECT MANAGER Anthony Haverly, P.E. (804) 603-5225
 SURVEYED BY, DATE Woodpeck, Inc. (804) 774-2000 5/8/2020
 DESIGN BY WSP USA, Inc. (757) 466-1732
 SUBSURFACE UTILITY BY, DATE Accumark, Inc. (804) 550-7740 4/3/2020

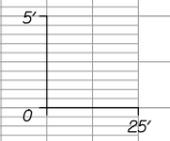
REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	95		U000-127-023, C501, B601 0004-127-051, C501, B640 0064-127-022, C501, B661 9999-127-107, C501, B602 0250-127-050, C501, B614	3A

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

N 1ST STREET OVER I-95



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



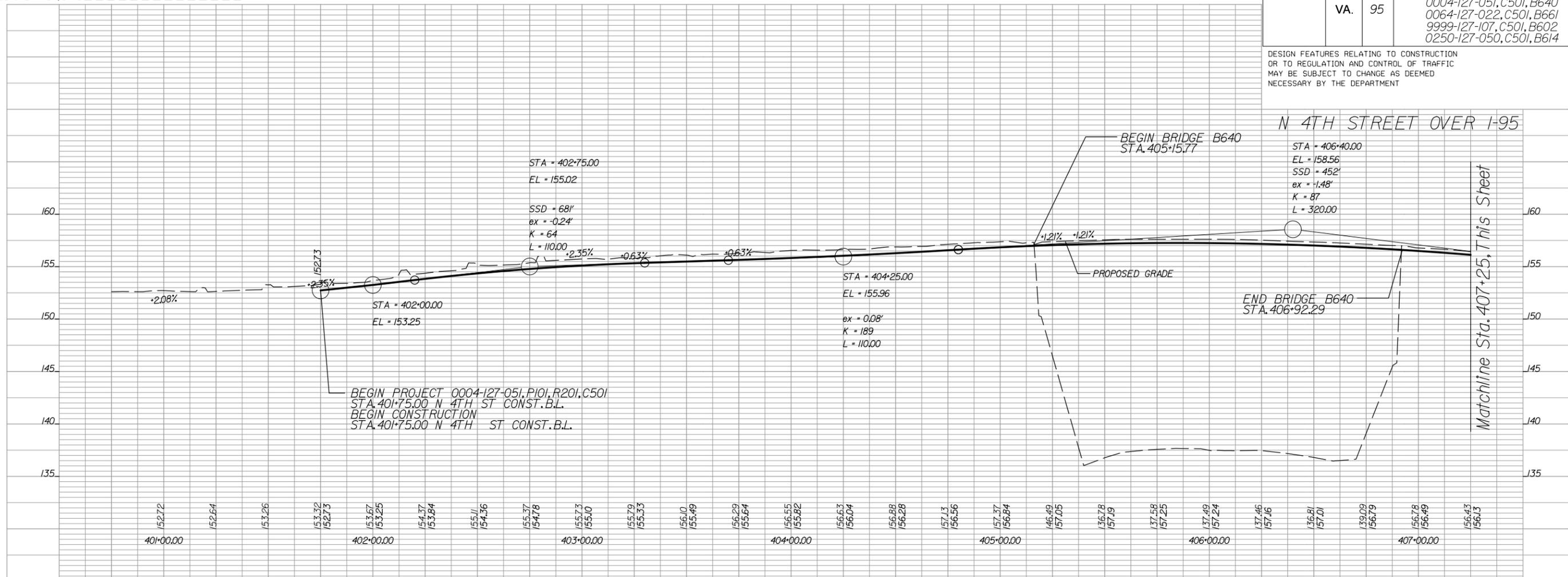
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			11+00.00			12+00.00			13+00.00			14+00.00			15+00.00			16+00.00			17+00.00																													

PROJECT	U000-127-023	0064-127-022	0250-127-050	SHEET NO.
	0004-127-051	9999-127-107		3A

PROJECT MANAGER Anthony Haverly, P.E. (804) 603-5225
 SURVEYED BY DATE Woodpeck, Inc. (804) 774-2000 5/8/2020
 DESIGN BY WSP USA, Inc. (757) 466-1732
 SUBSURFACE UTILITY BY DATE Accumark, Inc. (804) 550-7740 4/3/2020

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	95		U000-127-023, C501, B601 0004-127-051, C501, B640 0064-127-022, C501, B661 9999-127-107, C501, B602 0250-127-050, C501, B614	4A

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

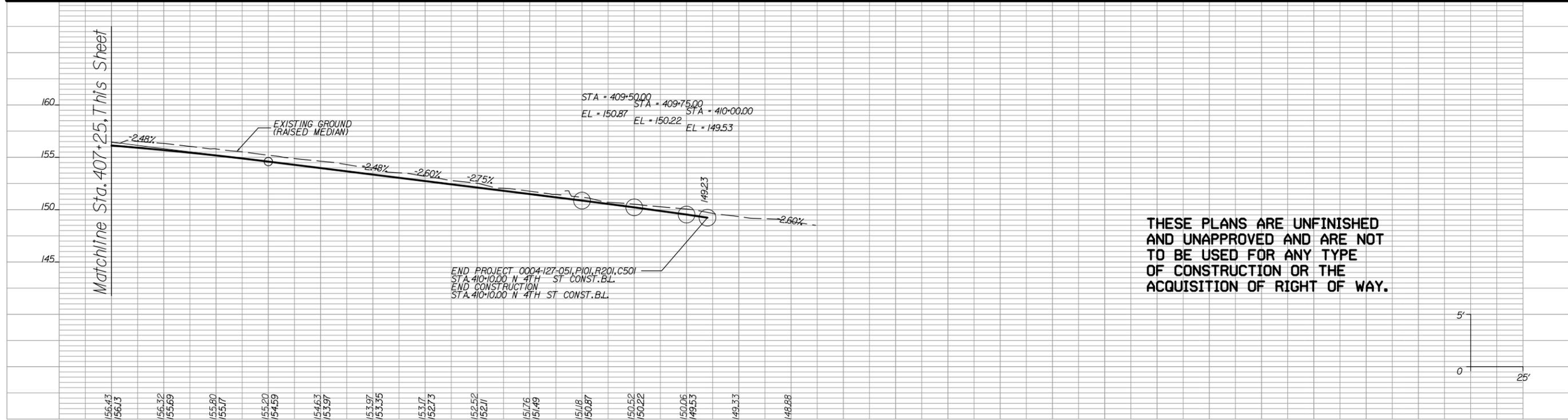


N 4TH STREET OVER I-95

STA = 406+40.00
 EL = 158.56
 SSD = 452'
 ex = -1.48'
 K = 87
 L = 320.00

BEGIN PROJECT 0004-127-051, P101, R201, C501
 STA 401+75.00 N 4TH ST CONST. B.L.
 BEGIN CONSTRUCTION
 STA 401+75.00 N 4TH ST CONST. B.L.

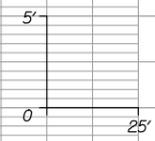
Matchline Sta. 407+25, This Sheet



END PROJECT 0004-127-051, P101, R201, C501
 STA 410+00.00 N 4TH ST CONST. B.L.
 END CONSTRUCTION
 STA 410+00.00 N 4TH ST CONST. B.L.

Matchline Sta. 407+25, This Sheet

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

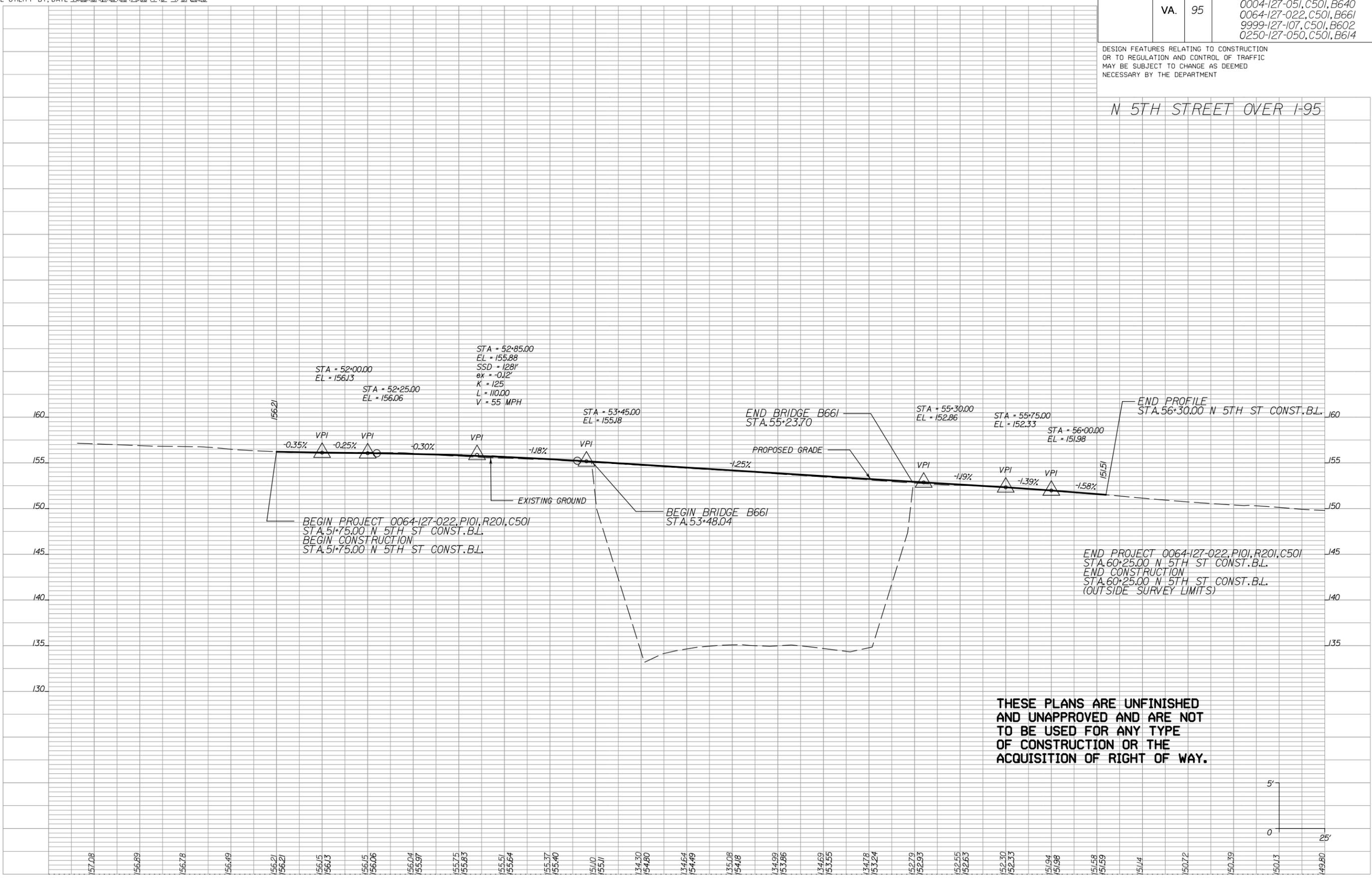


PROJECT MANAGER Anthony Haverly, P.E. (804) 603-5225
SURVEYED BY, DATE Woodpeck, Inc. (804) 774-2000 5/8/2020
DESIGN BY WSP, USA, Inc. (757) 466-1732
SUBSURFACE UTILITY BY, DATE Accumark, Inc. (804) 550-7740 4/3/2020

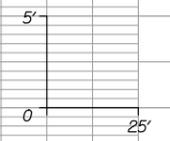
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	VA.	95		U000-127-023, C501, B601 0004-127-051, C501, B640 0064-127-022, C501, B661 9999-127-107, C501, B602 0250-127-050, C501, B614	5A

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

N 5TH STREET OVER I-95



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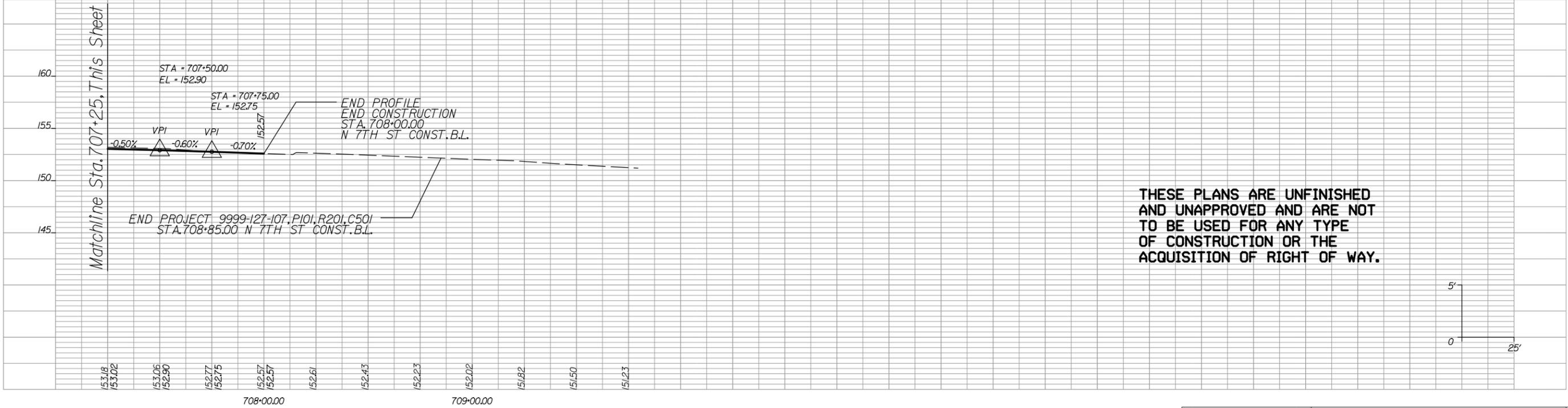
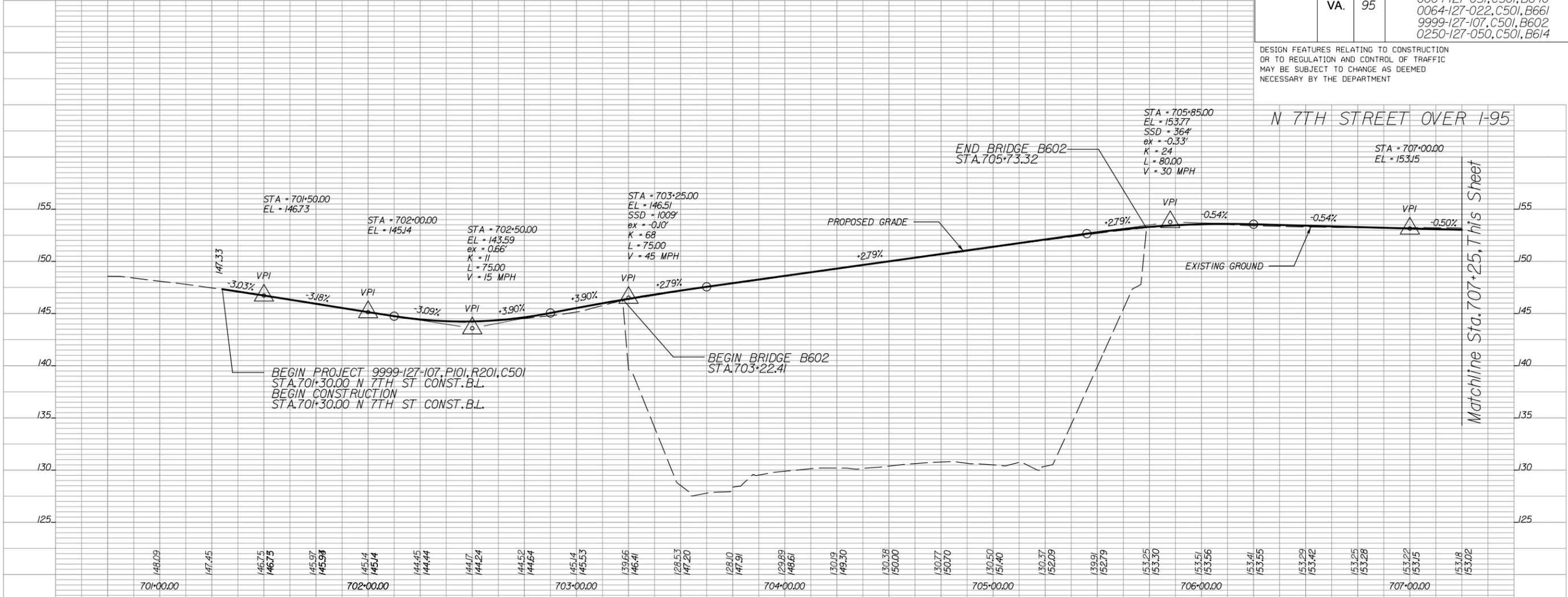
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PROJECT	SHEET NO.
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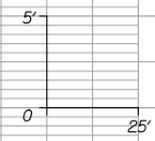
PROJECT MANAGER Anthony Haverly, P.E. (804) 603-5225
 SURVEYED BY DATE Woodpeck, Inc. (804) 774-2000 5/8/2020
 DESIGN BY WSP USA, Inc. (757) 466-1732
 SUBSURFACE UTILITY BY DATE Accumark, Inc. (804) 550-7740 4/3/2020

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	95		U000-127-023, C501, B601 0004-127-051, C501, B640 0064-127-022, C501, B661 9999-127-107, C501, B602 0250-127-050, C501, B614	6A

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



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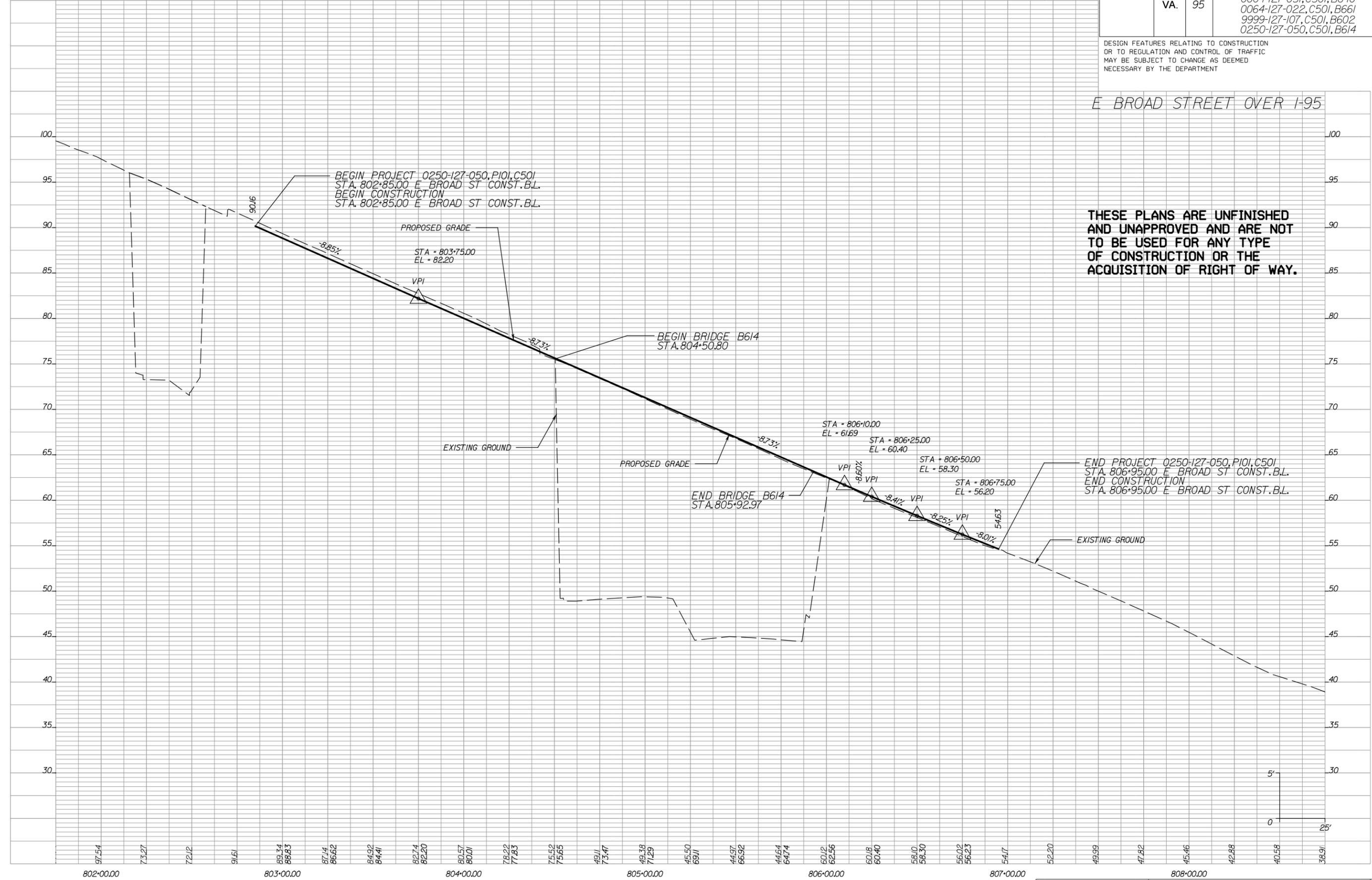
PROJECT MANAGER Anthony Haverly, P.E. (804) 603-5225
SURVEYED BY, DATE Woodpeck, Inc. (804) 774-2000 5/8/2020
DESIGN BY WSP, USA, Inc. (757) 466-1732
SUBSURFACE UTILITY BY, DATE Accurmark, Inc. (804) 550-7740 4/3/2020

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	95	U000-127-023, C501, B601 0004-127-051, C501, B640 0064-127-022, C501, B661 9999-127-107, C501, B602 0250-127-050, C501, B614	7A

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

E BROAD STREET OVER I-95

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



03-AUG-2021 13:39

PROJECT	SHEET NO.
U000-127-023 0064-127-022 0250-127-050 0004-127-051 9999-127-107	7A

Bridge Plans



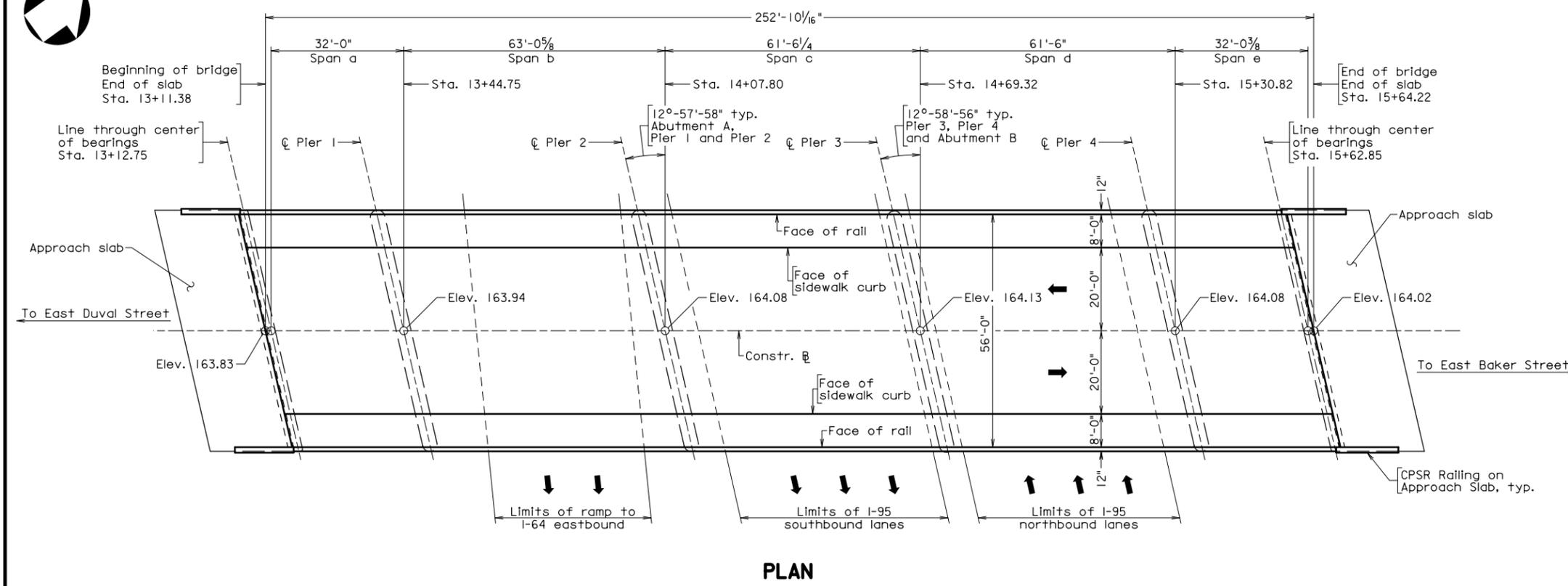


STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	—	STP-5A27(802)	95	U000-127-023, B601	1
Federal Structure No. 00000000021282			FHWA Construction and Scour Code: X271-SN		
Federal Stewardship and Oversight Code: NFO			UPC No. 111300		

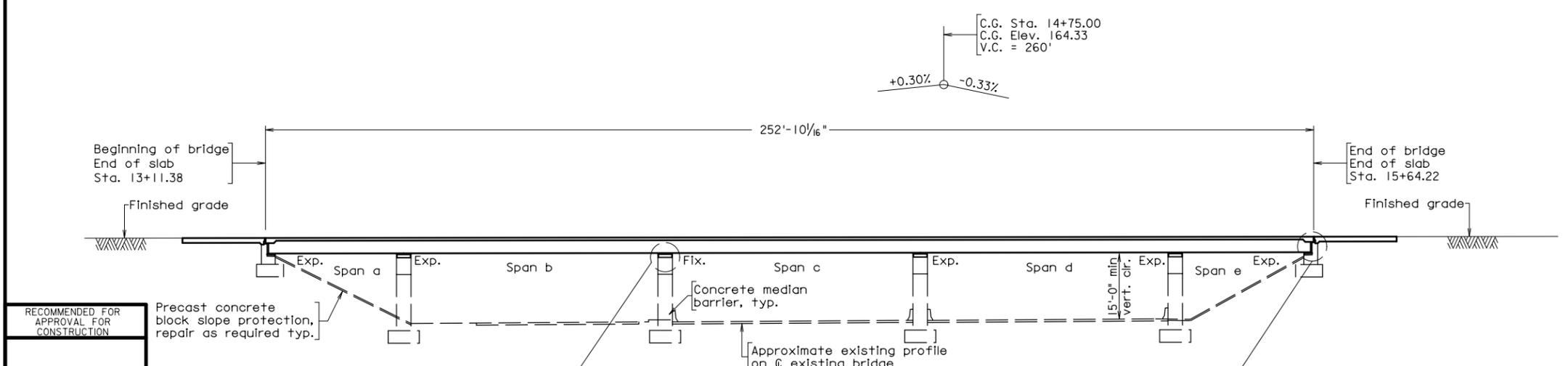
DESIGN EXCEPTIONS:
 Reduced minimum vertical clearance from 16'-6" to 15'-0". Approved by State Structure and Bridge Engineer on April 14, 2021.

GENERAL NOTES:
 Width: 8'-0" sidewalk, 40'-0" roadway, 8'-0" sidewalk. Overall width 56'-0" face-to-face of rails.
 Span layout: 32'-0" - 63'-0⁵/₈" - 61'-6¹/₄" - 61'-6" - 32'-0³/₈" continuous steel plate girder spans.
 Capacity: HL-93 loading (proposed design for superstructure).
 Specifications:
 Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.
 Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new elements only)
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; Including all current revisions.

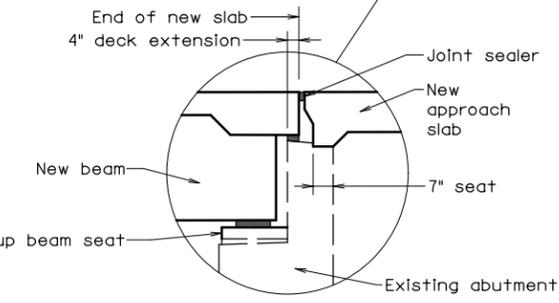
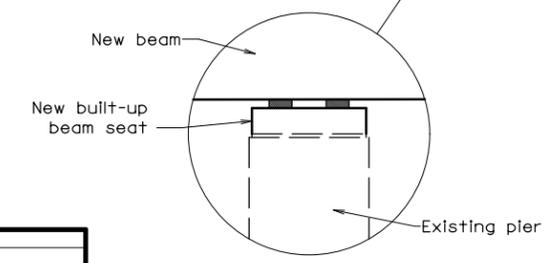
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.
 This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.
 Design loading includes 20 psf allowance for construction tolerances and construction method.
 Bridge No. of existing bridge is 8016. Plan No. are 176-16, 176-19, 195-16, 195-16C, 196-16C and 196-16D.
 The existing structure is designated a Type B structure in accordance with Sec. 411.



PLAN



DEVELOPED SECTION ALONG CONSTR. B



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

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WSP USA Inc. Virginia Beach, 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.		

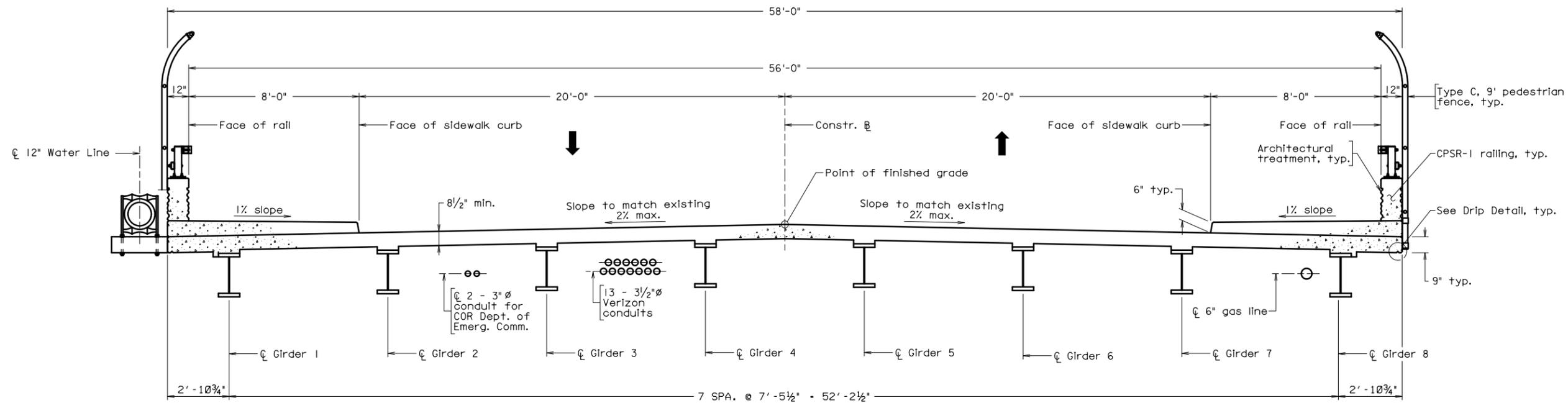
VDOT
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED SUPERSTRUCTURE REPLACEMENT
1ST STREET OVER I-95 AND I-64
CITY OF RICHMOND
PROJ. U000-127-023, B601

Recommended for Approval: _____ Date _____
 (Developer)

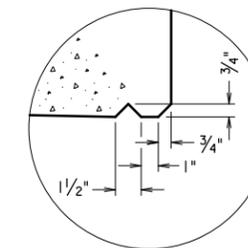
Approved: _____ Date _____
 Chief Engineer

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STATE	ROUTE	FEDERAL AID PROJECT	STATE	ROUTE	PROJECT	SHEET NO.
VA.	—	STP-5A27(802)	95	U000-127-023, B601		2



TRANSVERSE SECTION



DRIP DETAIL
Not to scale

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WSP USA INC
VIRGINIA BEACH, VA
STRUCTURAL ENGINEER

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION

Scale: 3/8" = 1'-0" unless otherwise noted

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1ST STREET OVER I-95 AND I-64

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION

No.	Description	Date	Designed:	Date	Plan No.	Sheet No.
			Drawn:	July 2021		
			Checked:			
Revisions						

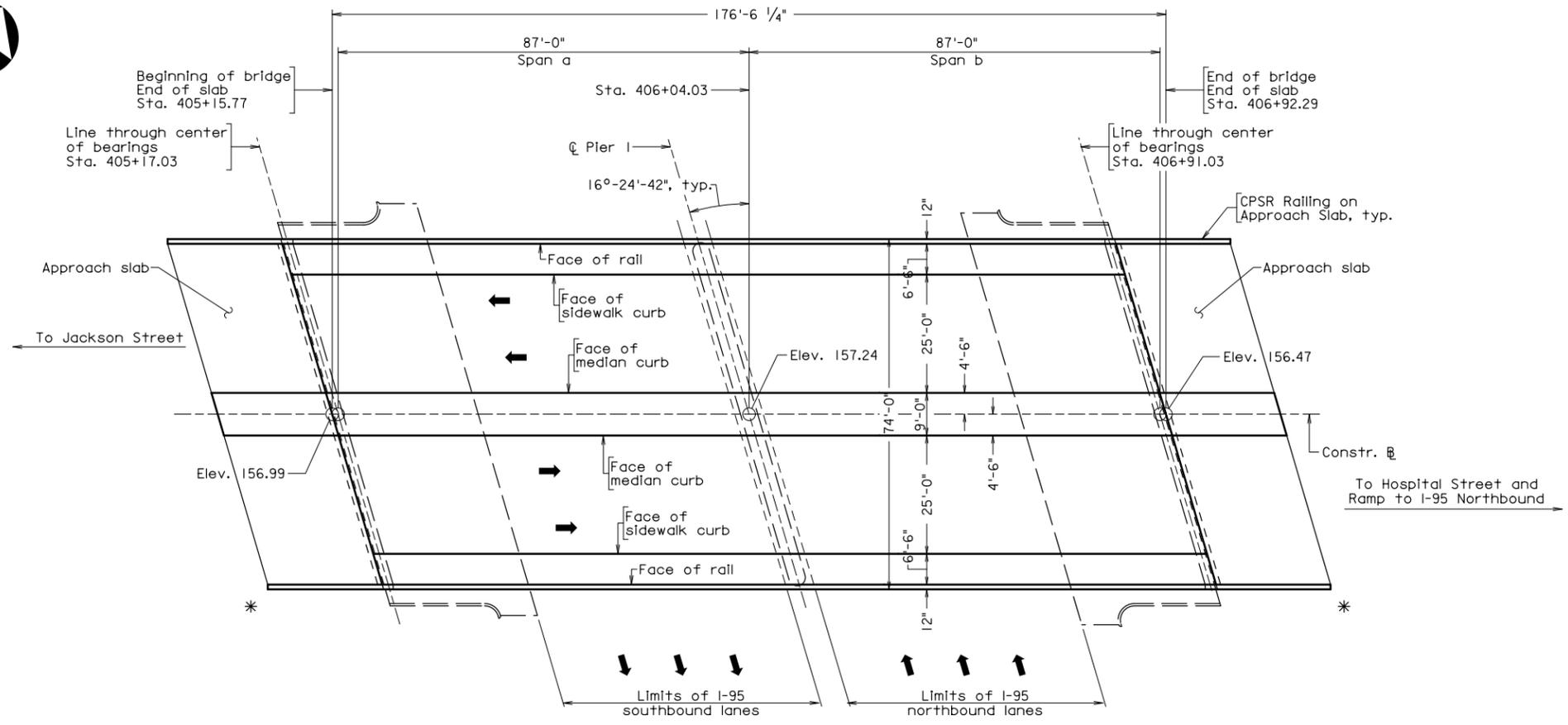


STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.		NHPP-BR04(308)	95	0004-127-051, B640	1
Federal Structure No. 00000000021284			FHWA Construction and Scour Code: X271-SN		
Federal Stewardship and Oversight Code: NFO			UPC No. 113388		

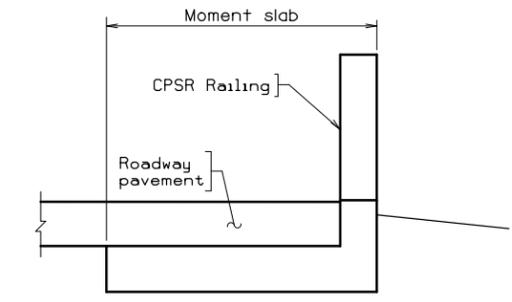
DESIGN EXCEPTION(S):
 Reduced minimum vertical clearance from 16'-6" to 15'-0". Approved by State Structure and Bridge Engineer on April 14, 2021.

GENERAL NOTES:
 Width: 6'-6" sidewalk, 25'-0" roadway, 9'-0" median, 25'-0" roadway, 6'-6" sidewalk. Overall width 72'-0" face-to-face of rails.
 Span layout: 87'-0" - 87'-0" continuous steel plate girder spans.
 Capacity: HL-93 loading (proposed design for superstructure).
 Specifications:
 Construction: Virginia Department of Transportation Road and Bridge Specifications, 2016.
 Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new elements only)
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revisions.

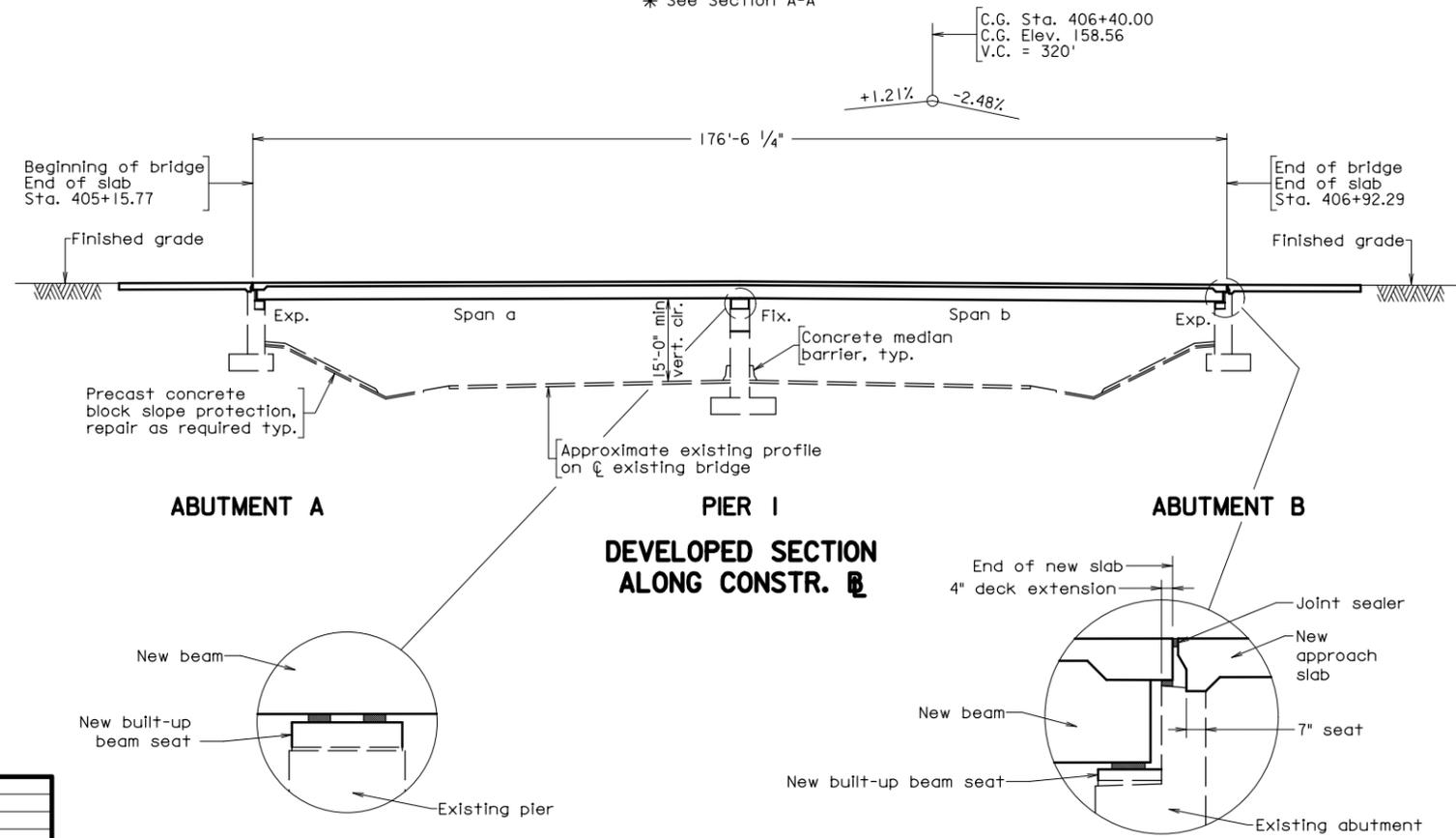
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.
 This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.
 Design loading includes 20 psf allowance for construction tolerance and construction methods.
 Bridge No. of existing bridge is 8017. Plan No. is 176-18.
 The existing structure is designated a Type B structure in accordance with Sec. 411.



PLAN
 * See Section A-A



**SECTION A-A
 SPECIAL DESIGN BARRIER WALL**
 N.T.S.



**DEVELOPED SECTION
 ALONG CONSTR. B**

PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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

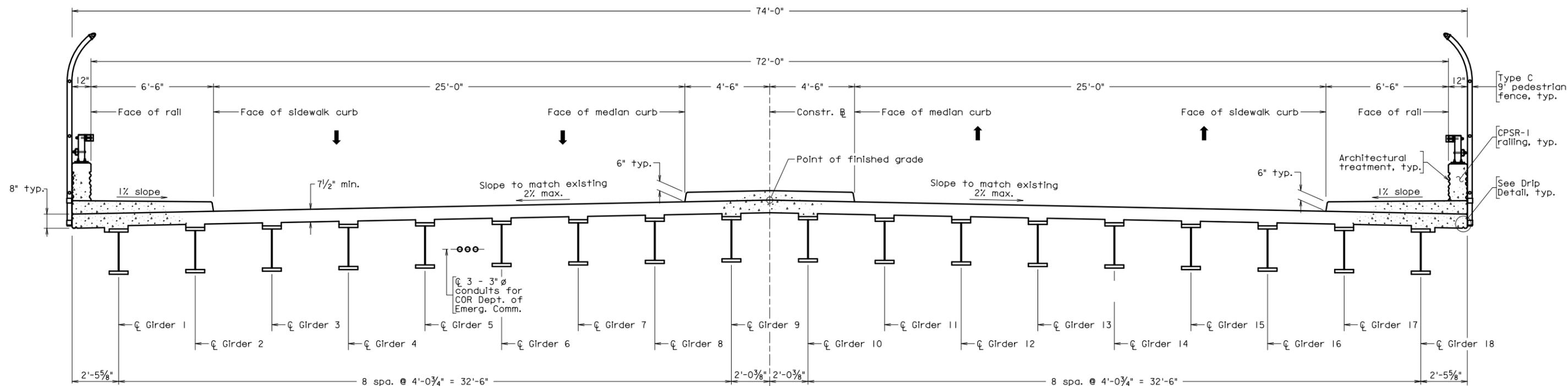
Recommended for Approval: _____ Date _____
 (Developer)
 Approved: _____ Date _____
 Chief Engineer

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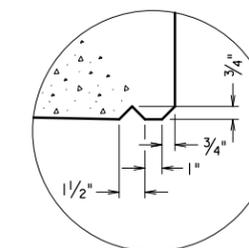
RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WSP USA Inc Virginia Beach, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:

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

STATE	ROUTE	FEDERAL AID PROJECT	STATE	ROUTE	PROJECT	SHEET NO.
VA.	—	NHPP-BR04(308)	95	004-127-051, B640		2



TRANSVERSE SECTION



DRIP DETAIL
Not to scale

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WSP USA INC
VIRGINIA BEACH, VA
STRUCTURAL ENGINEER

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION

Scale: 3/8" = 1'-0" unless otherwise noted

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4TH STREET OVER I-95

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION

No.	Description	Date	Designed:	Date	Plan No.	Sheet No.
			Drawn:	July 2021		
			Checked:			
Revisions						



STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.		NHPP-064-3(510)	95	0064-127-022, B661	1
Federal Structure No. 00000000021287			FHWA Construction and Scour Code: X271-SN		
Federal Stewardship and Oversight Code: NFO			UPC No. 111294		

DESIGN EXCEPTION(S):
 Reduced minimum vertical clearance from 16'-6" to 15'-0". Approved by State Structure and Bridge Engineer on March 31, 2021

GENERAL NOTES:
 Widths: 55'-7" roadway. Overall width 55'-7" face-to-face of rails.

Span layout: 34'-0" - 54'-9" - 54'-9" - 29'-6" continuous steel plate girder spans.
 Capacity: HL-93 loading (proposed design for superstructure).

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

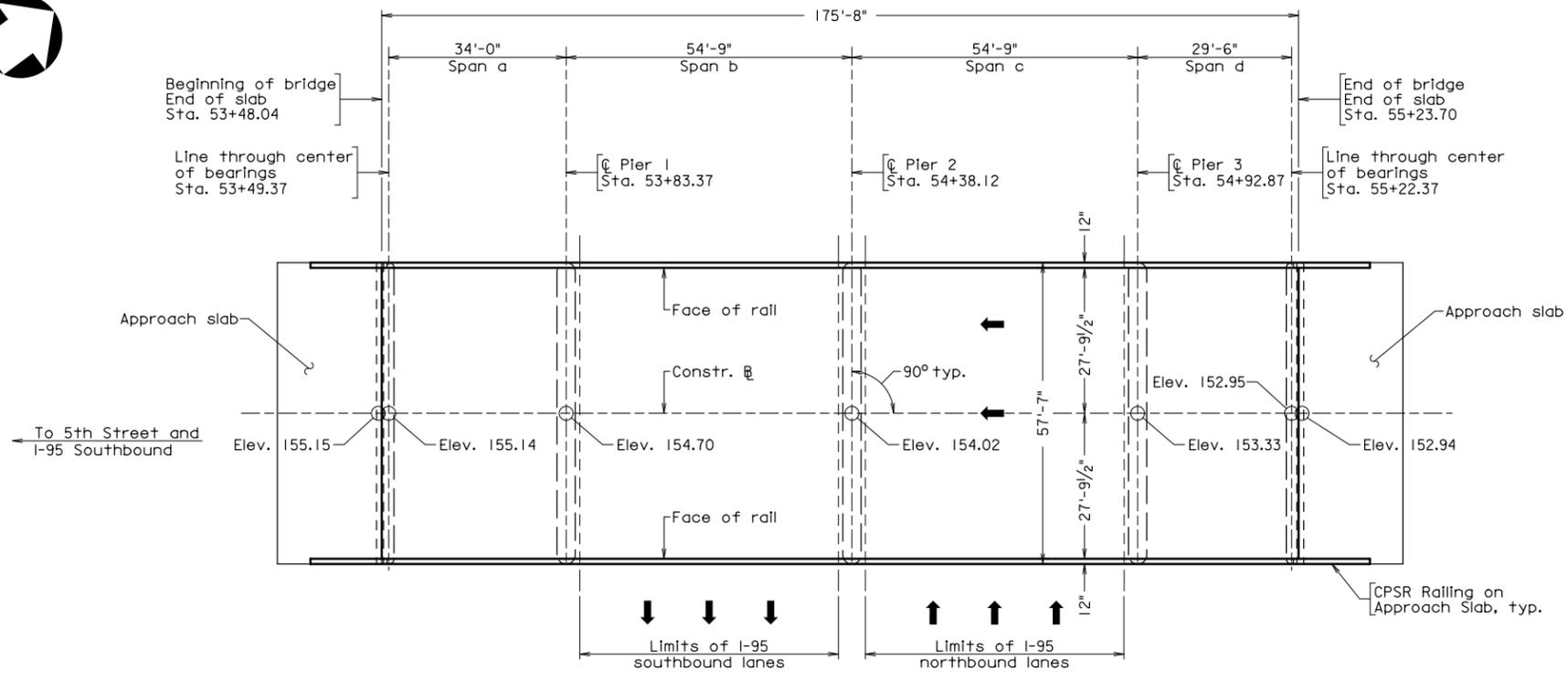
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.

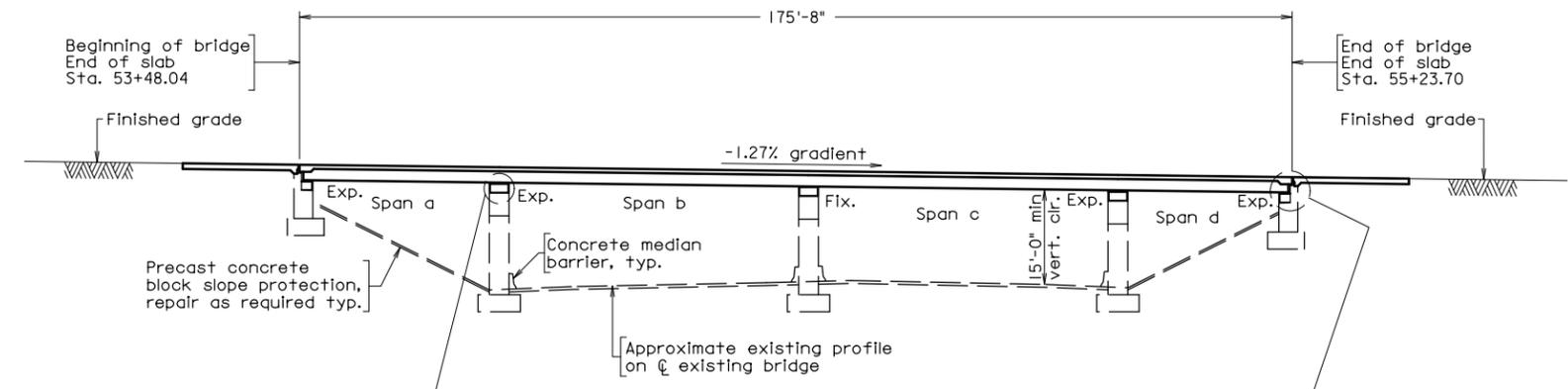
Bridge No. of existing bridge is 8019. Plan No. are 195-17, 195-17A, 195-17B, 195-17C, 195-17D, and 195-17E.

Design loading includes 20 psf allowance for construction tolerance and construction methods.

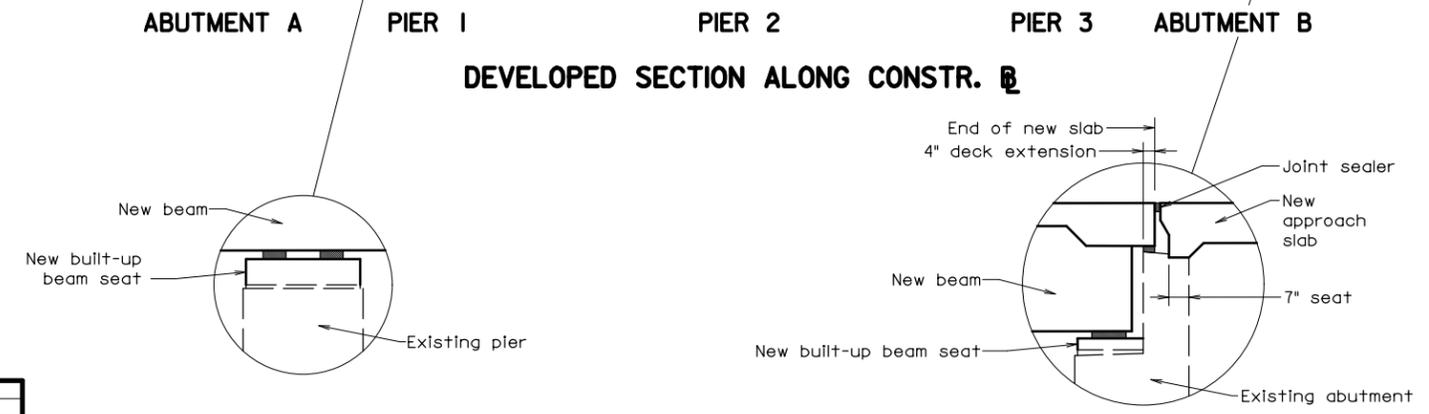
The existing structure is designated a Type B structure in accordance with Sec. 411.



PLAN



DEVELOPED SECTION ALONG CONSTR. B



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

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RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WSP USA Inc. Virginia Beach, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:

PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

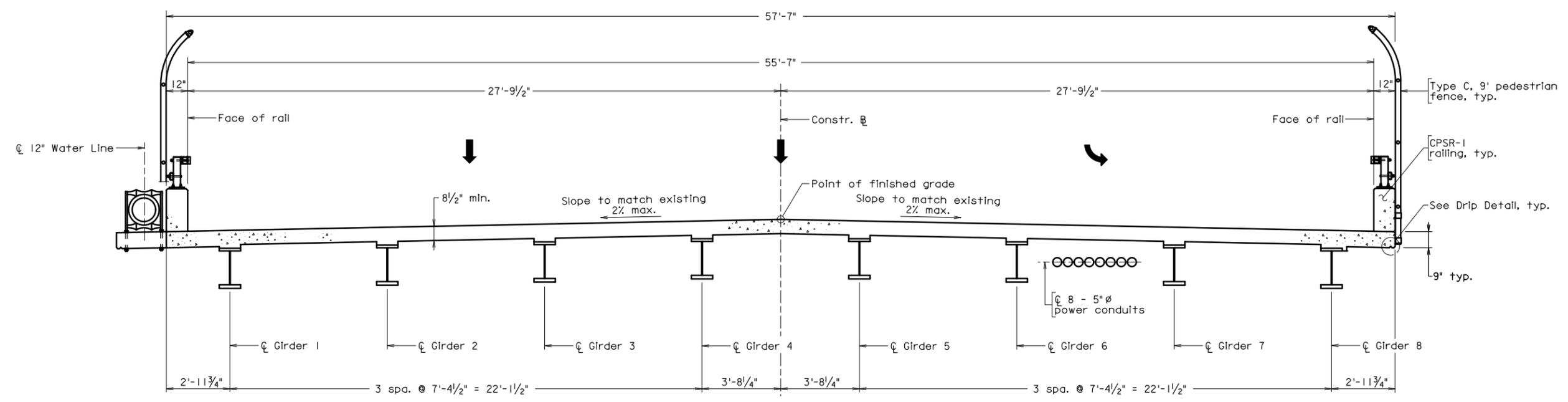
No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

VDOT
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE REPAIR
I-64 WB RAMP TO 5TH STREET
AND I-95 SB OVER I-95
CITY OF RICHMOND
PROJ. 0064-127-022, B661

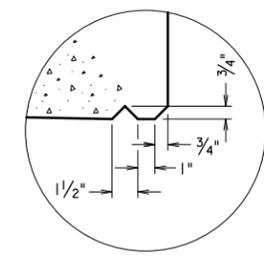
Recommended for Approval: _____ Date _____
 (Developer)

Approved: _____ Date _____
 Chief Engineer

STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NHPP-064-3(510)	95	0064-127-022, B661	2



TRANSVERSE SECTION



DRIP DETAIL
Not to scale

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: 3/8" = 1'-0" unless otherwise noted © 2021, Commonwealth of Virginia

I-64 WB RAMP TO 5TH STREET AND I-95 SB OVER I-95

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE AND BRIDGE DIVISION			
TRANSVERSE SECTION			
No.	Description	Date	Designed:
			Drawn:
			Checked:
			Date
			Plan No.
			Sheet No.
Revisions			July 2021

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WSP USA INC
VIRGINIA BEACH, VA
STRUCTURAL ENGINEER



STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NHPP-5A27(784)	95	9999-127-107, B602	1
Federal Structure No. 00000000021289			FHWA Construction and Scour Code: X271-SN		
Federal Stewardship and Oversight Code: NFO			UPC No. 118484		

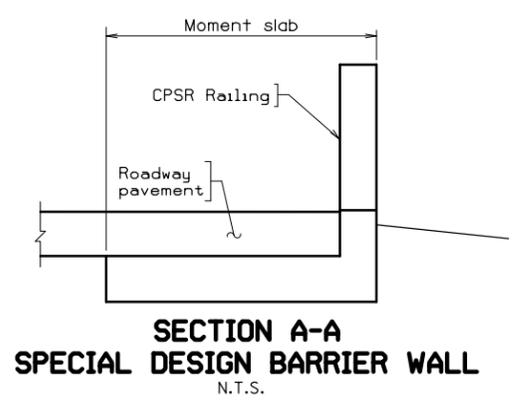
DESIGN EXCEPTIONS:
 Reduced minimum vertical clearance from 16'-6" to 15'-0". Approved by State Structure and Bridge Engineer on April 14, 2021.

GENERAL NOTES:
 Widths: 8'-0" sidewalk, 50'-0" roadway, Overall width 58'-0" face-to-face of rails.
 Span layout: 59'-0" - 54'-9" - 54'-9" - 40'-3" - 39'-6" continuous steel plate girder spans.
 Capacity: HL-93 loading (proposed design for superstructure).
 Specifications:
 Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.
 Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new elements only)
 Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revisions.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.
 This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.
 Design loading includes 20 psf allowance for construction tolerance and construction methods.
 Bridge No. of existing bridge is 8020. Plan No. are 195-18, 176-19, 176-19A, 195-18A, 195-18B, 195-18C, 195-18D, and 195-18E.
 The existing structure is designated a Type B structure in accordance with Sec. 411.

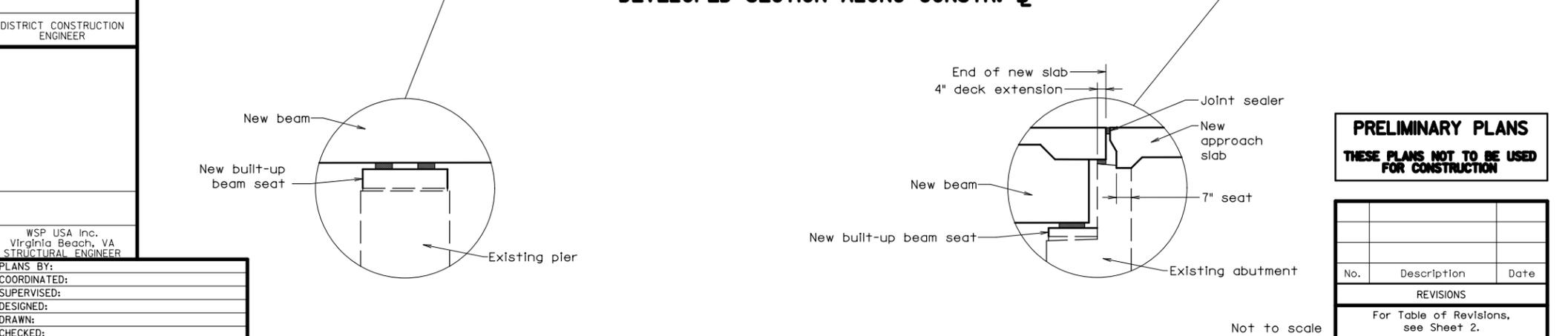
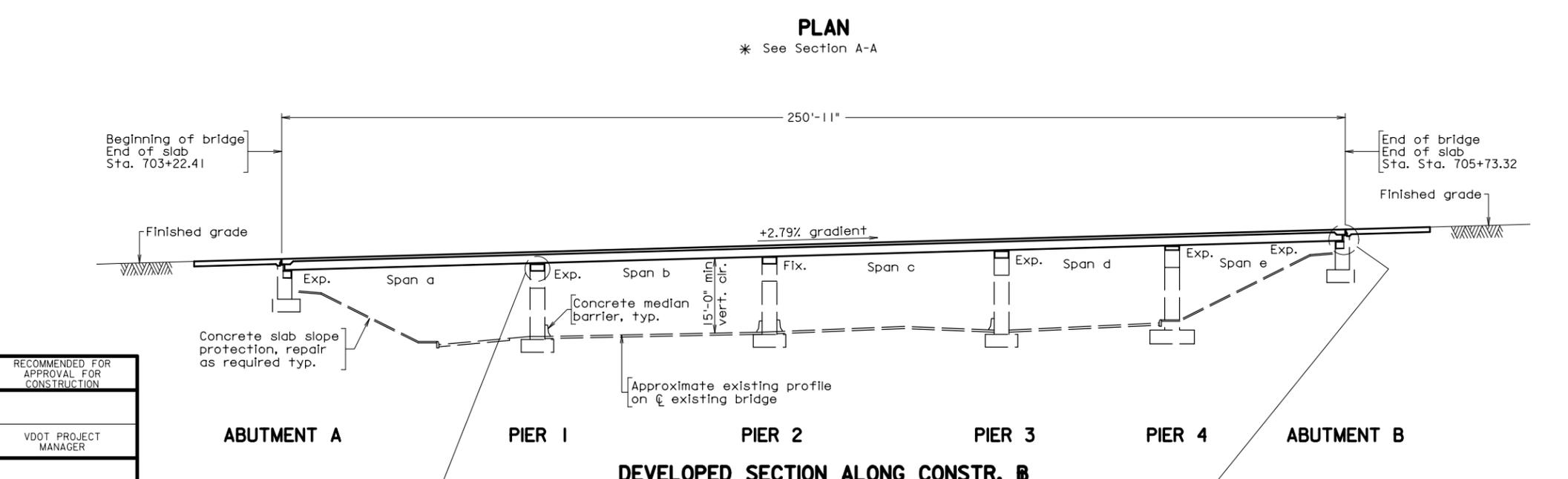
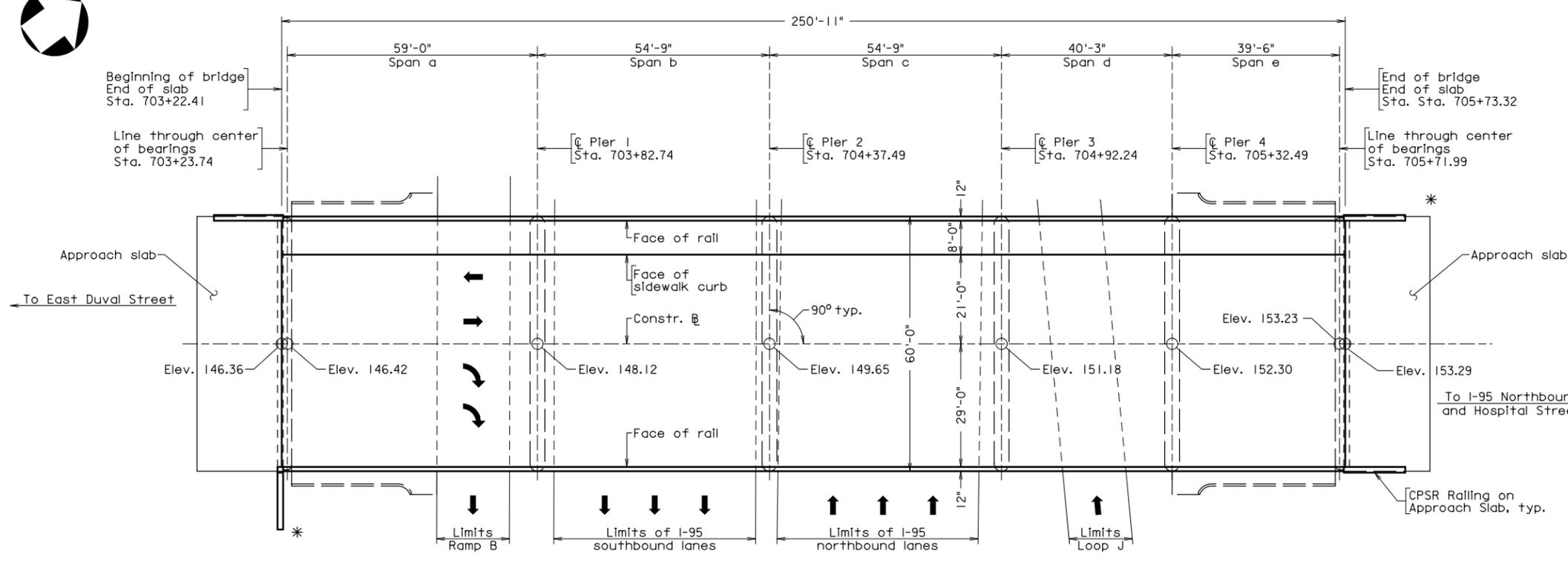
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.
 This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.
 Design loading includes 20 psf allowance for construction tolerance and construction methods.
 Bridge No. of existing bridge is 8020. Plan No. are 195-18, 176-19, 176-19A, 195-18A, 195-18B, 195-18C, 195-18D, and 195-18E.
 The existing structure is designated a Type B structure in accordance with Sec. 411.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.
 This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.
 Design loading includes 20 psf allowance for construction tolerance and construction methods.
 Bridge No. of existing bridge is 8020. Plan No. are 195-18, 176-19, 176-19A, 195-18A, 195-18B, 195-18C, 195-18D, and 195-18E.
 The existing structure is designated a Type B structure in accordance with Sec. 411.



VDOT
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED SUPERSTRUCTURE REPLACEMENT
7TH STREET OVER I-95, LOOP J AND RAMP B
CITY OF RICHMOND
PROJ.: 9999-127-107, B602

Recommended for Approval: _____ Date _____
 (Developer)
 Approved: _____ Date _____
 Chief Engineer
 Date: _____ © 2021, Commonwealth of Virginia Sheet 1 of 2



PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

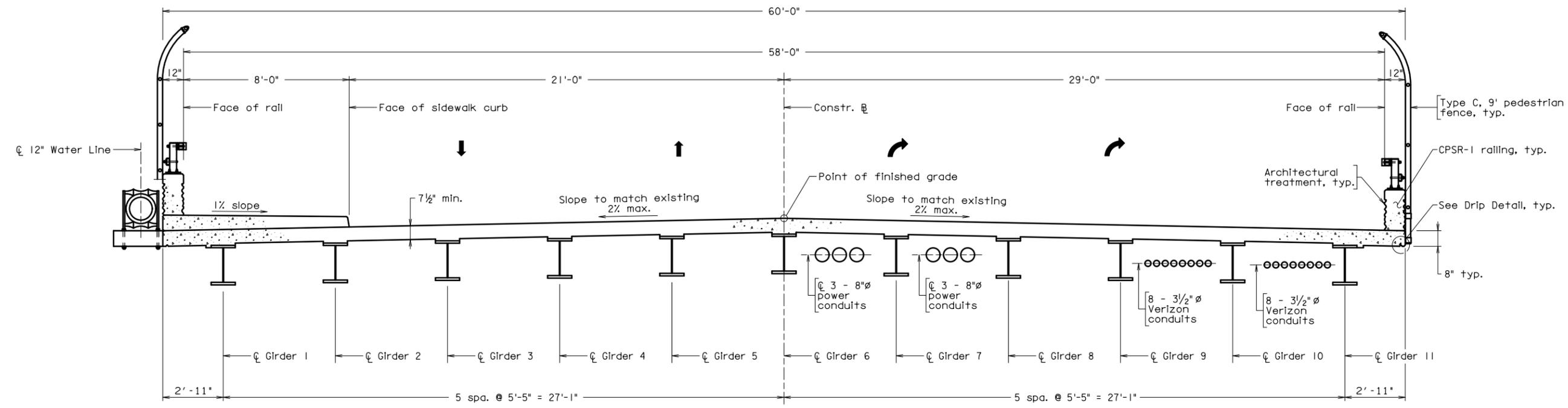
No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

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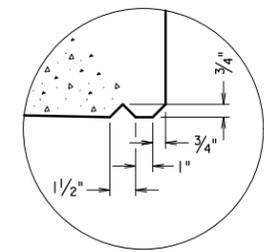
RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WSP USA Inc. Virginia Beach, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:

STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NHPP-5A27(784)	95	9999-127-107, B602	2

Note:
The concrete parapet of the CPSR-1 rail at the north edge of the bridge shall be cast prior to constructing any portion of the sidewalk.



TRANSVERSE SECTION



DRIP DETAIL
Not to scale

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: 3/8" = 1'-0" unless otherwise noted © 2021, Commonwealth of Virginia

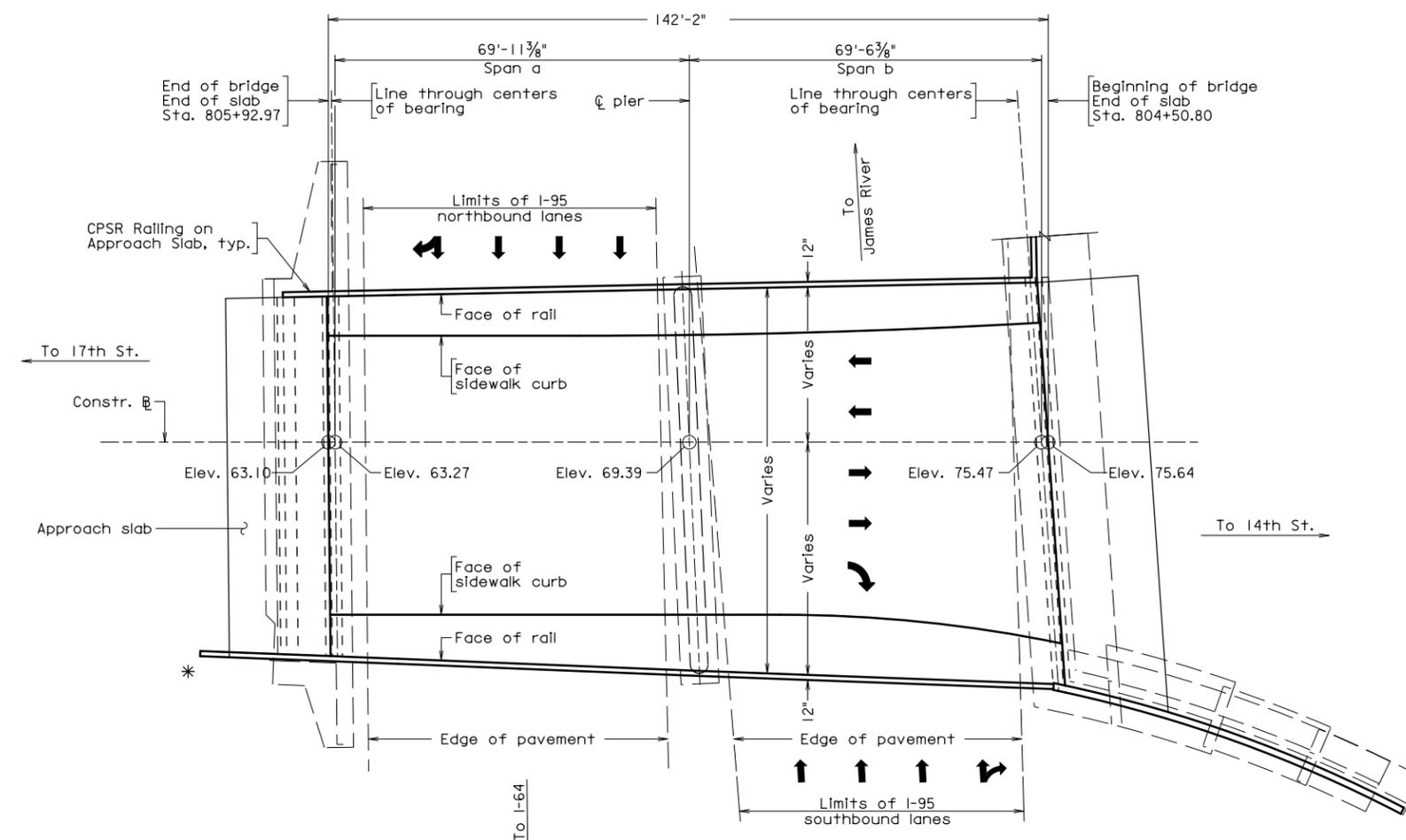
7TH STREET OVER I-95

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
TRANSVERSE SECTION			
No.	Description	Date	Designed:
			Drawn:
			Checked:
			Date
			Plan No.
			Sheet No.
Revisions			

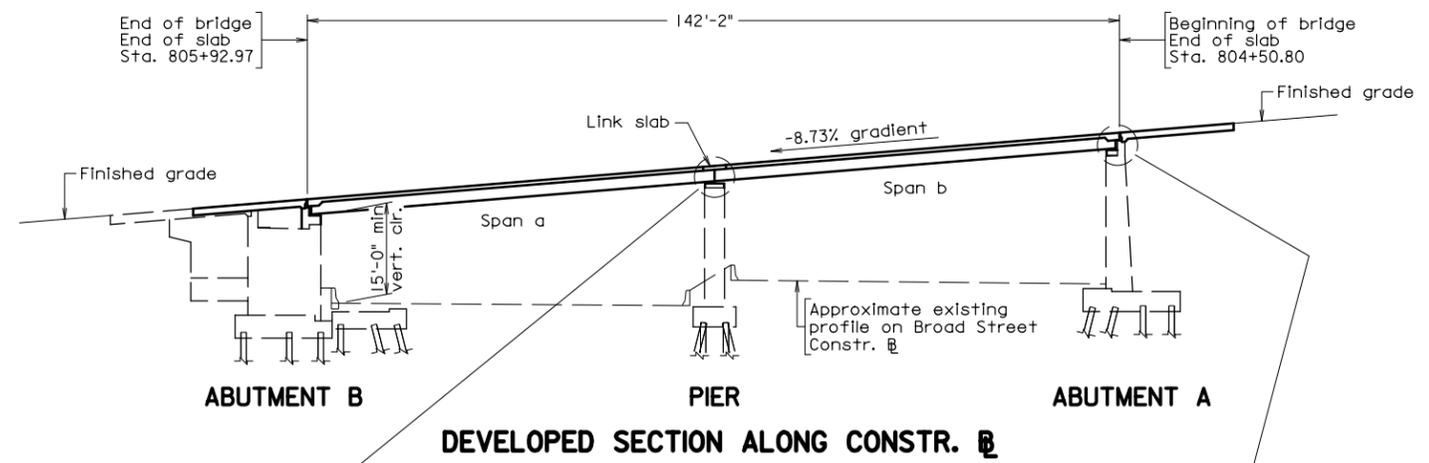
WSP USA INC
VIRGINIA BEACH, VA
STRUCTURAL ENGINEER



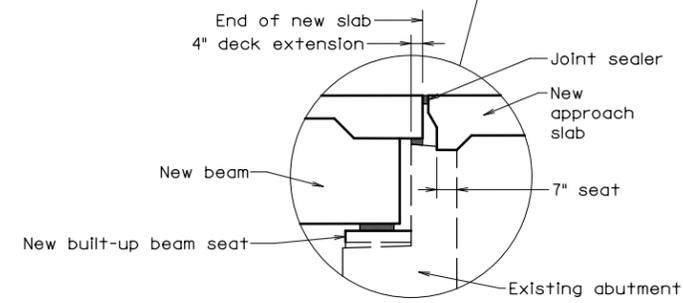
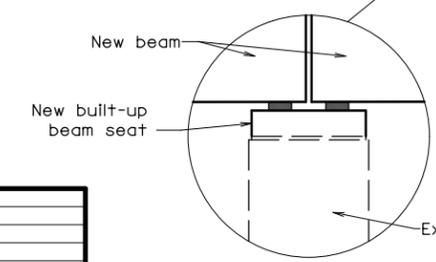
STATE	ROUTE	FEDERAL AID PROJECT	STATE ROUTE	PROJECT	SHEET NO.
VA.	—	NHPP-BR04(307)	250	0250-127-050, B614	1
Federal Structure No. 00000000021569			FHWA Construction and Scour Code: X271-SN		
Federal Stewardship and Oversight Code: NFO			UPC No. 113375		



PLAN
* See Section A-A



DEVELOPED SECTION ALONG CONSTR. B



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

DESIGN EXCEPTION(S):

Reduced minimum vertical clearance from 16'-6" to 15'-0". Approved by State Structure and Bridge Engineer on April 14, 2021.

GENERAL NOTES:

- Width: Varies face-to-face of rails.
- Span layout: 69'-11 3/8" - 69'-6 3/8" steel plate girder spans
- Drainage Area:
- Capacity: HL-93 loading (proposed design for superstructure).
- Specifications:
 - Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.
 - Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications (new elements only)
 - Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revisions.

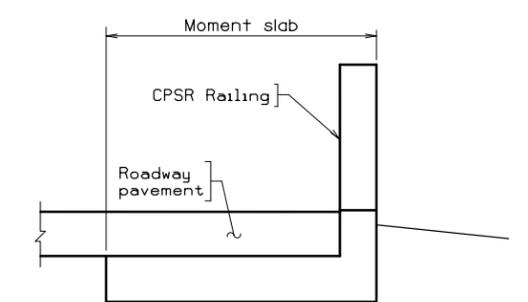
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.

Design loading includes 20 psf allowance for construction tolerance and construction methods.

Bridge No. of existing bridge is 1820. Plan No. are 195-20 and 255-30.

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



**SECTION A-A
SPECIAL DESIGN BARRIER WALL
N.T.S.**



**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED SUPERSTRUCTURE REPLACEMENT ON
E. BROAD STREET OVER I-95
CITY OF RICHMOND
PROJECT 0250-127-050, B614**

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RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION ENGINEER
WSP USA Inc. Virginia Beach, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:

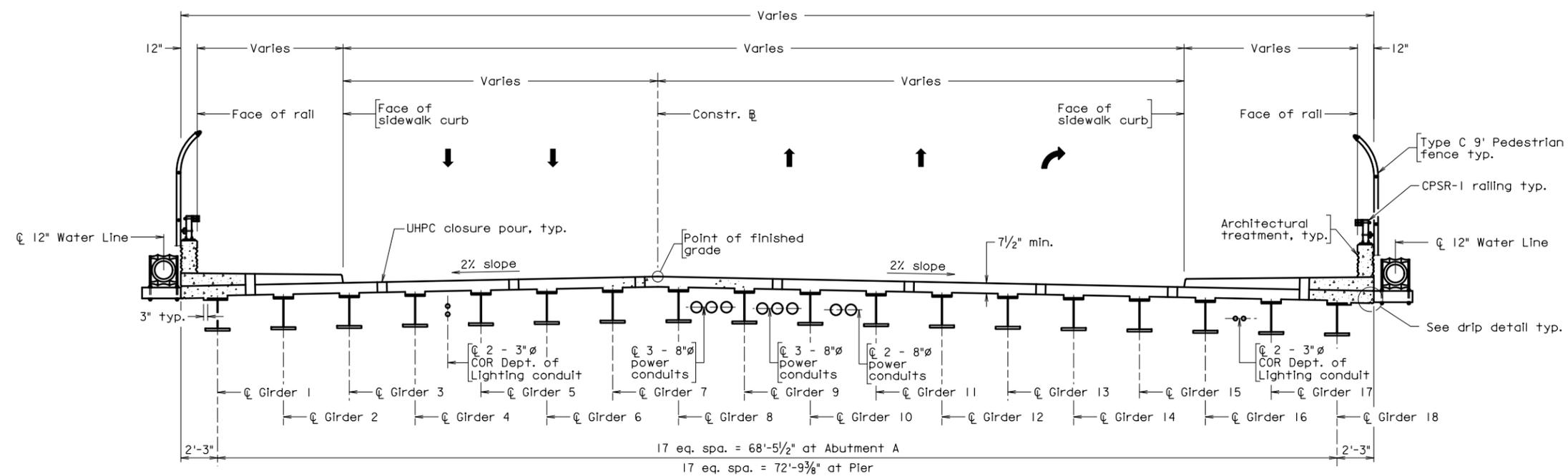
**PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION**

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

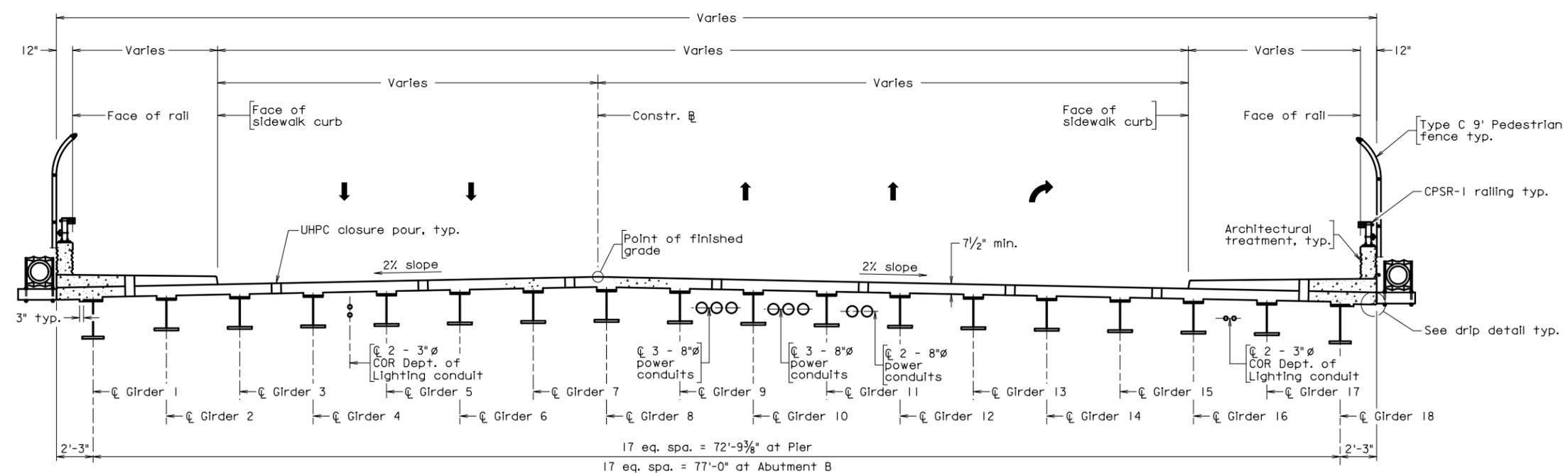
Recommended for Approval: _____ Date _____
(Developer)

Approved: _____ Date _____
Chief Engineer

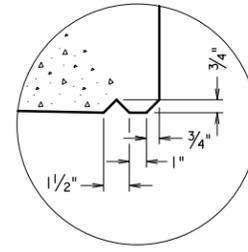
STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	STATE	PROJECT	SHEET NO.
VA.	—		NHPP-BR04(307)	250		0250-127-050, B614	2



TRANSVERSE SECTION - SPAN a



TRANSVERSE SECTION - SPAN b



DRIP DETAIL

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WSP USA INC
VIRGINIA BEACH, VA
STRUCTURAL ENGINEER

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION

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

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E. BROAD STREET OVER I-95

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
TRANSVERSE SECTIONS			
No.	Description	Date	Designed:
			Drawn:
			Checked:
			Date
			Plan No.
			Sheet No.
Revisions			

Proposal Schedule



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024			
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
VDOT Bridges Over I-95 Superstructure Replacement Bundling - Proposal Schedule																	
Project Milestones																	
MS-1000	Notice to Proceed (EST 11/10/2021)	0	11-10-21		0												
MS-1020	Substantial Completion	0		10-21-24	0										◆		
MS-1030	Final Completion (12/20/2024)	0		12-20-24*	0										◆		
Design																	
1st Street Design																	
1st Street Design - Stage 1																	
DES-1-1000	1st Street Design Stage 1 - Survey	30	11-10-21	12-23-21	0	■											
DES-1-1040	1st Street Design Stage 1 - Bridge TS&L	35	12-17-21	02-08-22	0	■											
1st Street Design - Stage 2																	
1st Street Design - Stage 2 - Substructure Repair																	
DES-1-3000	1st Street Design Stage 2 - Bridge Substructure Repair	43	02-09-22	04-08-22	0	■											
DES-1-3010	1st Street Design Stage 2 - VDOT / FHWA Review - Substructure Repair	21	04-09-22	04-29-22	2	■											
1st Street Design - AFC																	
1st Street Design - AFC - Substructure Repair																	
DES-1-5000	1st Street Design AFC - Bridge Substructure Repair	10	05-02-22	05-13-22	0		■										
DES-1-5010	1st Street Design AFC - VDOT/FHWA Review - Substructure Repair	21	05-14-22	06-03-22	2		■										
Construction																	
Substructure Repairs																	
Substructure Repairs - 1st Street Bridge																	
1st Street Bridge Abutment A																	
CON-SUB-1-1000	1st St Abutment A - Setup MOT Devices	2	06-06-22	06-07-22	0			■									
CON-SUB-1-1010	1st St Abutment A - Perform Concrete Repairs & Slope Protection	10	06-09-22	06-23-22	0			■									
CON-SUB-1-1020	1st St Abutment A - Reconstruct Concrete Available Pedestals	5	06-24-22	07-01-22	0			■									
CON-SUB-1-1030	1st St Abutment A - Remove MOT Devices	2	07-05-22	07-07-22	0			■									
1st Street Bridge Pier 1																	
CON-SUB-1-2000	1st St Pier 1 - Setup MOT Devices	2	07-08-22	07-11-22	0			■									
CON-SUB-1-2010	1st St Pier 1 - Perform Perform Concrete Repairs	10	07-12-22	07-28-22	0			■									
CON-SUB-1-2020	1st St Pier 1 - Reconstruct Concrete Available Pedestals	5	07-29-22	08-05-22	0			■									
CON-SUB-1-2030	1st St Pier 1 - Remove MOT Devices	2	08-08-22	08-09-22	0			■									
1st Street Bridge Pier 2																	

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
■ Actual Work
 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
CON-SUB-1-3000	1st St Pier 2 - Setup MOT Devices	2	08-11-22	08-12-22	0														
CON-SUB-1-3010	1st St Pier 2 - Perform Perform Concrete Repairs	10	08-15-22	08-29-22	0				■										
CON-SUB-1-3020	1st St Pier 2 - Reconstruct Concrete Available Pedestals	5	08-30-22	09-07-22	0				■										
CON-SUB-1-3030	1st St Pier 2 - Remove MOT Devices	2	09-08-22	09-09-22	0														
1st Street Bridge Pier 3																			
CON-SUB-1-4000	1st St Pier 3 - Setup MOT Devices	2	09-12-22	09-13-22	0														
CON-SUB-1-4010	1st St Pier 3 - Perform Perform Concrete Repairs	10	09-15-22	09-30-22	0				■										
CON-SUB-1-4020	1st St Pier 3 - Reconstruct Concrete Available Pedestals	5	10-03-22	10-10-22	0				■										
CON-SUB-1-4030	1st St Pier 3 - Remove MOT Devices	2	10-11-22	10-13-22	0														
1st Street Bridge Pier 4																			
CON-SUB-1-5000	1st St Pier 4 - Setup MOT Devices	2	10-14-22	10-17-22	0														
CON-SUB-1-5010	1st St Pier 4 - Perform Perform Concrete Repairs	10	10-18-22	11-03-22	0				■										
CON-SUB-1-5020	1st St Pier 4 - Reconstruct Concrete Available Pedestals	5	11-04-22	11-11-22	0				■										
CON-SUB-1-5030	1st St Pier 4 - Remove MOT Devices	2	11-14-22	11-15-22	0														
1st Street Bridge Abutment B																			
CON-SUB-1-6000	1st St Abutment B - Setup MOT Devices	2	11-17-22	11-18-22	0														
CON-SUB-1-6010	1st St Abutment B - Perform Concrete Repairs & Slope Protection	10	11-21-22	12-06-22	0				■										
CON-SUB-1-6020	1st St Abutment B - Reconstruct Concrete Available Pedestals	5	12-08-22	12-15-22	0				■										
CON-SUB-1-6030	1st St Abutment B - Remove MOT Devices	2	12-16-22	12-19-22	0														
Superstructure Repairs																			
Stage I Superstructure Repairs																			
1st Street Bridge Super Structure Repairs																			
1st Street Utility Relocations																			
CON-SUP-1-1060	1st St Utility Relocations - Remove Existing City GAS	10	05-22-23	06-06-23	0														■
1st Street Bridge Phase 1																			
CON-SUP-1-2000	1st St Phase 1 - Install MOT Devices / Detour	5	12-20-22	12-30-22	0														■
CON-SUP-1-2010	1st St Phase 1 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	01-03-23	01-19-23	0														■
CON-SUP-1-2020	1st St Phase 1 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	01-20-23	02-06-23	0														■
CON-SUP-1-2030	1st St Phase 1 - Install Bearings / Beams / Diaphragms	5	02-07-23	02-14-23	0														■
CON-SUP-1-2040	1st St Phase 1 - Construct & Pour New Deck	17	02-16-23	03-15-23	0														■
CON-SUP-1-2060	1st St Phase 1 - Construct Approach Roadway Shoulder Paving & Drainage	16	03-16-23	04-11-23	0														■
CON-SUP-1-2080	1st St Phase 1 - Construct CPSR Railing Wall	15	04-13-23	05-08-23	0														■

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
■ Actual Work
 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024						
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
CON-SUP-1-2090	1st St Phase 1 - Install CPSR Railing	7	05-09-23	05-19-23	0															
CON-SUP-1-2100	1st St Phase 1 - Install Pedestrian Fence	5	05-22-23	05-30-23	0															
CON-SUP-1-2110	1st St Phase 1 - Remove MOT	5	05-31-23	06-06-23	0															
1st Street Bridge Phase 2																				
CON-SUP-1-3000	1st St Phase 2 - Install MOT Devices / Detour	5	06-08-23	06-15-23	0															
CON-SUP-1-3010	1st St Phase 2 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	06-16-23	07-03-23	0															
CON-SUP-1-3020	1st St Phase 2 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	07-06-23	07-21-23	0															
CON-SUP-1-3030	1st St Phase 2 - Install Bearings / Beams / Diaphragms	5	07-24-23	07-31-23	0															
CON-SUP-1-3040	1st St Phase 2 - Construct & Pour New Deck	18	08-01-23	08-29-23	0															
CON-SUP-1-3050	1st St Phase 2 - Construct Approach Roadway Shoulder Paving & Drainage	16	08-31-23	09-26-23	0															
CON-SUP-1-3070	1st St Phase 2 - Construct CPSR Railing Wall	15	09-28-23	10-23-23	0															
CON-SUP-1-3090	1st St Phase 2 - Install CPSR Railing	7	10-24-23	11-03-23	0															
CON-SUP-1-3100	1st St Phase 2 - Install Pedestrian Fence	5	11-06-23	11-13-23	0															
CON-SUP-1-3110	1st St Phase 2 - Remove MOT	5	11-14-23	11-21-23	0															
Stage II Superstructure Repairs																				
5th Street Bridge Super Structure Repairs																				
5th Street Bridge Phase 1																				
CON-SUP-5-2000	5th St Phase 1 - Install MOT Devices	5	11-22-23	11-30-23	0															
CON-SUP-5-2010	5th St Phase 1 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	12-01-23	12-18-23	0															
CON-SUP-5-2020	5th St Phase 1 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	12-19-23	01-08-24	0															
CON-SUP-5-2030	5th St Phase 1 - Install Bearings / Beams / Diaphragms	5	01-09-24	01-16-24	0															
CON-SUP-5-2040	5th St Phase 1 - Construct & Pour New Deck	17	01-18-24	02-15-24	0															
CON-SUP-5-2060	5th St Phase 1 - Construct Approach Roadway Shoulder Paving & Drainage	16	02-16-24	03-14-24	0															
CON-SUP-5-2070	5th St Phase 1 - Construct CPSR Railing Wall	15	03-15-24	04-11-24	0															
CON-SUP-5-2080	5th St Phase 1 - Install CPSR Railing	7	04-12-24	04-23-24	0															
CON-SUP-5-2090	5th St Phase 1 - Install Pedestrian Fence	5	04-24-24	04-30-24	0															
CON-SUP-5-2100	5th St Phase 1 - Remove MOT	5	05-02-24	05-09-24	0															
5th Street Bridge Phase 2																				
CON-SUP-5-3000	5th St Phase 2 - Install MOT Devices	5	05-10-24	05-17-24	0															
CON-SUP-5-3010	5th St Phase 2 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	05-20-24	06-04-24	0															
CON-SUP-5-3020	5th St Phase 2 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	06-06-24	06-21-24	0															
CON-SUP-5-3030	5th St Phase 2 - Install Bearings / Beams / Diaphragms	5	06-24-24	07-01-24	0															

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
■ Actual Work
 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024			
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
VDOT Bridges Over I-95 Superstructure Replacement Bundling - Proposal Schedule																	
Project Milestones																	
MS-1000	Notice to Proceed (EST 11/10/2021)	0	11-10-21		0												
MS-1010	Scope Validation Period (120 Days) (EST 3/9/2022)	120	11-10-21	03-09-22*	0	█											
MS-1020	Substantial Completion	0		10-21-24	0										◆		
MS-1030	Final Completion (12/20/2024)	0		12-20-24*	0										◆		
Project Management & Admin																	
PM-1000	QA/QC - Design	335	11-10-21	10-10-22	339	█	█	█	█								
PM-1010	Right of Way Coordination & Acquisition	335	11-10-21	10-10-22	321	█	█	█	█								
PM-1020	QA/QC - Public Involvement / Public Relations	1077	11-10-21	10-21-24	0	█	█	█	█	█	█	█	█	█	█		
PM-1030	Right of Way Kickoff Meeting (w/in 90 Days of NTP)	1	12-17-21	12-17-21	758												
PM-1040	Environmental & Cultural Resource Approvals & Permitting	244	02-09-22	10-10-22	321		█	█	█								
PM-1050	QA/QC - Construction	869	06-06-22	10-21-24	0			█	█	█	█	█	█	█	█		
PM-1060	QA/QC - Environmental Compliance	869	06-06-22	10-21-24	0			█	█	█	█	█	█	█	█		
Design																	
1st Street Design																	
1st Street Design - Stage 1																	
DES-1-1000	1st Street Design Stage 1 - Survey	30	11-10-21	12-23-21	0	█											
DES-1-1010	1st Street Design Stage 1 - Roadway (Includes Drainage)	35	12-17-21	02-08-22	14		█										
DES-1-1020	1st Street Design Stage 1 - MOT/TMP	35	12-17-21	02-08-22	14		█										
DES-1-1030	1st Street Design Stage 1 - Utilities	35	12-17-21	02-08-22	14		█										
DES-1-1040	1st Street Design Stage 1 - Bridge TS&L	35	12-17-21	02-08-22	0		█										
DES-1-1050	1st Street Design Stage 1 - VDOT/FHWA Review	21	02-09-22	03-01-22	20			█									
1st Street Design - Stage 2																	
DES-1-2000	1st Street Design Stage 2 - Roadway (Includes Drainage)	40	03-02-22	04-27-22	29			█									
DES-1-2010	1st Street Design Stage 2 - MOT/TMP	40	03-02-22	04-27-22	29			█									
DES-1-2020	1st Street Design Stage 2 - Utilities	40	03-02-22	04-27-22	29			█									
DES-1-2030	1st Street Design Stage 2 - Bridge Superstructure Replacement	55	03-10-22	05-26-22	8			█									
DES-1-2040	1st Street Design Stage 2 - Load Ratings	38	04-11-22	06-03-22	3			█									
DES-1-2050	1st Street Design Stage 2 - Geotechnical Report	38	04-11-22	06-03-22	3			█									
DES-1-2060	1st Street Design Stage 2 - VDOT / FHWA Review	21	06-04-22	06-24-22	5				█								
1st Street Design - Stage 2 - Substructure Repair																	
DES-1-3000	1st Street Design Stage 2 - Bridge Substructure Repair	43	02-09-22	04-08-22	0			█									

█ Remaining Level of Effort
 █ Remaining Work
 ◆ Milestone
█ Actual Work
 █ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
DES-1-3010	1st Street Design Stage 2 - VDOT / FHWA Review - Substructure Repair	21	04-09-22	04-29-22	2			■											
1st Street Design - AFC																			
DES-1-4000	1st Street Design AFC - Roadway (Includes Drainage)	20	06-27-22	07-25-22	3				■										
DES-1-4010	1st Street Design AFC - MOT/TMP	20	06-27-22	07-25-22	3				■										
DES-1-4020	1st Street Design AFC - Utilities	20	06-27-22	07-25-22	3				■										
DES-1-4030	1st Street Design AFC - Bridge Superstructure Replacement	20	06-27-22	07-25-22	3				■										
DES-1-4040	1st Street Design AFC - VDOT/FHWA	21	07-26-22	08-15-22	3				■										
1st Street Design - AFC - Substructure Repair																			
DES-1-5000	1st Street Design AFC - Bridge Substructure Repair	10	05-02-22	05-13-22	0														
DES-1-5010	1st Street Design AFC - VDOT/FHWA Review - Substructure Repair	21	05-14-22	06-03-22	2														
4th Street Design																			
4th Street Design - Stage 1																			
DES-4-1000	4th Street Design Stage 1 - Survey	30	11-10-21	12-23-21	56	■													
DES-4-1010	4th Street Design Stage 1 - Roadway (Includes Drainage)	35	12-17-21	02-08-22	68	■													
DES-4-1020	4th Street Design Stage 1 - MOT/TMP	35	12-17-21	02-08-22	68	■													
DES-4-1030	4th Street Design Stage 1 - Utilities	35	12-17-21	02-08-22	68	■													
DES-4-1040	4th Street Design Stage 1 - Bridge TS&L	35	12-17-21	02-08-22	56	■													
DES-4-1050	4th Street Design Stage 1 - VDOT/FHWA Review	21	02-09-22	03-01-22	97			■											
4th Street Design - Stage 2																			
DES-4-2000	4th Street Design Stage 2 - Roadway (Includes Drainage)	40	03-02-22	04-27-22	82		■												
DES-4-2010	4th Street Design Stage 2 - MOT/TMP	40	03-02-22	04-27-22	82		■												
DES-4-2020	4th Street Design Stage 2 - Utilities	40	03-02-22	04-27-22	82		■												
DES-4-2030	4th Street Design Stage 2 - Bridge Superstructure Replacement	55	03-10-22	05-26-22	61		■												
DES-4-2040	4th Street Design Stage 2 - Load Ratings	38	04-11-22	06-03-22	56			■											
DES-4-2050	4th Street Design Stage 2 - Geotechnical Report	38	04-11-22	06-03-22	56			■											
DES-4-2060	4th Street Design Stage 2 - VDOT / FHWA Review	21	06-04-22	06-24-22	81				■										
4th Street Design - Stage 2 - Substructure Repair																			
DES-4-3000	4th Street Design Stage 2 - Bridge Substructure Repair	43	02-09-22	04-08-22	56		■												
DES-4-3010	4th Street Design Stage 2 - VDOT / FHWA Review - Substructure Repair	21	04-09-22	04-29-22	136			■											
4th Street Design - AFC																			
DES-4-4000	4th Street Design AFC - Roadway (Includes Drainage)	20	06-27-22	07-25-22	55				■										
DES-4-4010	4th Street Design AFC - MOT/TMP	20	06-27-22	07-25-22	55				■										
DES-4-4020	4th Street Design AFC - Utilities	20	06-27-22	07-25-22	55				■										

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
■ Actual Work
 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024				
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
DES-4-4030	4th Street Design AFC - Bridge Superstructure Replacement	20	06-27-22	07-25-22	55				■									
DES-4-4040	4th Street Design AFC - VDOT/FHWA	21	07-26-22	08-15-22	78				■									
4th Street Design - AFC - Substructure Repair																		
DES-4-5000	4th Street Design AFC - Bridge Substructure Repair	10	05-02-22	05-13-22	93			■										
DES-4-5010	4th Street Design AFC - VDOT/FHWA Review - Substructure Repair	21	05-14-22	06-03-22	136			■										
Broad Street Design																		
Broad Street Design - Stage 1																		
DES-B-1000	Broad Street Design Stage 1 - Survey	30	12-10-21	01-25-22	147	■												
DES-B-1010	Broad Street Design Stage 1 - Roadway (Includes Drainage)	45	01-10-22	03-11-22	147	■												
DES-B-1020	Broad Street Design Stage 1 - MOT/TMP	45	01-10-22	03-11-22	147	■												
DES-B-1030	Broad Street Design Stage 1 - Utilities	45	01-10-22	03-11-22	147	■												
DES-B-1040	Broad Street Design Stage 1 - Bridge TS&L	45	01-10-22	03-11-22	147	■												
DES-B-1050	Broad Street Design Stage 1 - VDOT/FHWA Review	21	03-12-22	04-01-22	213		■											
Broad Street Design - Stage 2																		
DES-B-2000	Broad Street Design Stage 2 - Roadway (Includes Drainage)	40	04-04-22	05-31-22	174			■										
DES-B-2010	Broad Street Design Stage 2 - MOT/TMP	40	04-04-22	05-31-22	174			■										
DES-B-2020	Broad Street Design Stage 2 - Utilities	40	04-04-22	05-31-22	174			■										
DES-B-2030	Broad Street Design Stage 2 - Bridge Superstructure Replacement	67	04-04-22	07-08-22	147			■										
DES-B-2040	Broad Street Design Stage 2 - Load Ratings	40	05-10-22	07-06-22	149			■										
DES-B-2050	Broad Street Design Stage 2 - Geotechnical Report	40	05-10-22	07-06-22	149			■										
DES-B-2060	Broad Street Design Stage 2 - VDOT/FHWA Review	21	07-09-22	07-29-22	215				■									
Broad Street Design - Stage 2 - Substructure Repair																		
DES-B-3000	Broad Street Design Stage 2 - Bridge Substructure Repair	40	03-14-22	05-09-22	149		■											
DES-B-3010	Broad Street Design Stage 2 - VDOT/FHWA Review - Substructure Repair	21	05-10-22	05-30-22	226			■										
Broad Street Design - AFC																		
DES-B-4000	Broad Street Design AFC - Roadway (Includes Drainage)	20	08-01-22	08-26-22	147				■									
DES-B-4010	Broad Street Design AFC - MOT/TMP	20	08-01-22	08-26-22	147				■									
DES-B-4020	Broad Street Design AFC - Utilities	20	08-01-22	08-26-22	147				■									
DES-B-4030	Broad Street Design AFC - Bridge Superstructure Replacement	20	08-01-22	08-26-22	147				■									
DES-B-4040	Broad Street Design AFC - VDOT/FHWA Review	21	08-27-22	09-16-22	215				■									
Broad Street Design - AFC - Substructure Repair																		
DES-B-5000	Broad Street Design AFC - Bridge Substructure Repair	10	05-31-22	06-13-22	155			■										
DES-B-5010	Broad Street Design AFC - VDOT/FHWA Review - Substructure Repair	21	06-14-22	07-04-22	226			■										



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
5th Street Design																			
5th Street Design - Stage 1																			
DES-5-1000	5th Street Design Stage 1 - Survey	30	12-10-21	01-25-22	214	■													
DES-5-1010	5th Street Design Stage 1 - Roadway (Includes Drainage)	65	01-10-22	04-08-22	224	■	■												
DES-5-1020	5th Street Design Stage 1 - MOT/TMP	65	01-10-22	04-08-22	224	■	■												
DES-5-1030	5th Street Design Stage 1 - Utilities	65	01-10-22	04-08-22	224	■	■												
DES-5-1040	5th Street Design Stage 1 - Bridge TS&L	65	01-10-22	04-08-22	214	■	■												
DES-5-1050	5th Street Design Stage 1 - VDOT/FHWA Review	21	04-09-22	04-29-22	327			■											
5th Street Design - Stage 2																			
DES-5-2000	5th Street Design Stage 2 - Roadway (Includes Drainage)	40	05-02-22	06-27-22	259			■											
DES-5-2010	5th Street Design Stage 2 - MOT/TMP	40	05-02-22	06-27-22	245			■											
DES-5-2020	5th Street Design Stage 2 - Utilities	40	05-02-22	06-27-22	245			■											
DES-5-2030	5th Street Design Stage 2 - Bridge Superstructure Replacement	60	05-02-22	07-26-22	225			■	■										
DES-5-2040	5th Street Design Stage 2 - Load Ratings	37	06-08-22	07-29-22	222				■										
DES-5-2050	5th Street Design Stage 2 - Geotechnical Report	37	06-08-22	07-29-22	222				■										
DES-5-2060	5th Street Design Stage 2 - VDOT/FHWA Review	21	07-30-22	08-19-22	324					■									
5th Street Design - Stage 2 - Substructure Repair																			
DES-5-3000	5th Street Design Stage 2 - Bridge Substructure Repair	40	04-11-22	06-07-22	214			■											
DES-5-3010	5th Street Design Stage 2 - VDOT/FHWA Review - Substructure Repair	21	06-08-22	06-28-22	310				■										
5th Street Design - AFC																			
DES-5-4000	5th Street Design AFC - Roadway (Includes Drainage)	20	08-22-22	09-19-22	221					■									
DES-5-4010	5th Street Design AFC - MOT/TMP	20	08-22-22	09-19-22	221					■									
DES-5-4020	5th Street Design AFC - Utilities	20	08-22-22	09-19-22	221					■									
DES-5-4030	5th Street Design AFC - Bridge Superstructure Replacement	20	08-22-22	09-19-22	221					■									
DES-5-4040	5th Street Design AFC - VDOT/FHWA Review	21	09-20-22	10-10-22	321						■								
5th Street Design - AFC - Substructure Repair																			
DES-5-5000	5th Street Design AFC - Bridge Substructure Repair	10	06-29-22	07-13-22	214				■										
DES-5-5010	5th Street Design AFC - VDOT/FHWA Review - Substructure Repair	21	07-14-22	08-03-22	309					■									
7th Street Design																			
7th Street Design - Stage 1																			
DES-7-1000	7th Street Design Stage 1 - Survey	30	12-10-21	01-25-22	204	■													
DES-7-1010	7th Street Design Stage 1 - Roadway (Includes Drainage)	65	01-10-22	04-08-22	238	■	■												
DES-7-1020	7th Street Design Stage 1 - MOT/TMP	65	01-10-22	04-08-22	238	■	■												

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
■ Actual Work
 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
DES-7-1030	7th Street Design Stage 1 - Utilities	65	01-10-22	04-08-22	238														
DES-7-1040	7th Street Design Stage 1 - Bridge TS&L	65	01-10-22	04-08-22	204														
DES-7-1050	7th Street Design Stage 1 - VDOT/FHWA Review	21	04-09-22	04-29-22	347														
7th Street Design - Stage 2																			
DES-7-2000	7th Street Design Stage 2 - Roadway (Includes Drainage)	40	05-02-22	06-27-22	273														
DES-7-2010	7th Street Design Stage 2 - MOT/TMP	40	05-02-22	06-27-22	258														
DES-7-2020	7th Street Design Stage 2 - Utilities	40	05-02-22	06-27-22	258														
DES-7-2030	7th Street Design Stage 2 - Bridge Superstructure Replacement	60	05-02-22	07-26-22	238														
DES-7-2040	7th Street Design Stage 2 - Load Ratings	37	06-08-22	07-29-22	235														
DES-7-2050	7th Street Design Stage 2 - Geotechnical Report	37	06-08-22	07-29-22	235														
DES-7-2060	7th Street Design Stage 2 - VDOT/FHWA Review	21	07-30-22	08-19-22	342														
7th Street Design - Stage 2 - Substructure Repair																			
DES-7-3000	7th Street Design Stage 2 - Bridge Substructure Repair	40	04-11-22	06-07-22	204														
DES-7-3010	7th Street Design Stage 2 - VDOT/FHWA Review - Substructure Repair	21	06-08-22	06-28-22	295														
7th Street Design - AFC																			
DES-7-4000	7th Street Design AFC - Roadway (Includes Drainage)	20	08-22-22	09-19-22	235														
DES-7-4010	7th Street Design AFC - MOT/TMP	20	08-22-22	09-19-22	235														
DES-7-4020	7th Street Design AFC - Utilities	20	08-22-22	09-19-22	235														
DES-7-4030	7th Street Design AFC - Bridge Superstructure Replacement	20	08-22-22	09-19-22	235														
DES-7-4040	7th Street Design AFC - VDOT/FHWA Review	21	09-20-22	10-10-22	339														
7th Street Design - AFC - Substructure Repair																			
DES-7-5000	7th Street Design AFC - Bridge Substructure Repair	10	06-29-22	07-13-22	203														
DES-7-5010	7th Street Design AFC - VDOT/FHWA Review - Substructure Repair	21	07-14-22	08-03-22	294														
Utility Coordination																			
UTIL-1000	Utility Coordination	205	11-10-21	09-02-22	203														
Procurement																			
Structural Steel																			
PROC-1000	Prepare & Submit - Structural Steel Shop Drawings (1st Street)	20	08-16-22	09-13-22	29														
PROC-1010	Review & Approve - Structural Steel Shop Drawings (1st Street)	10	09-14-22	09-27-22	29														
PROC-1020	Fabricate & Deliver - Structural Steel (1st Street)	60	09-28-22	12-22-22	29														
PROC-1030	Prepare & Submit - Structural Steel Shop Drawings (4th Street)	20	08-16-22	09-13-22	55														
PROC-1040	Review & Approve - Structural Steel Shop Drawings (4th Street)	10	09-14-22	09-27-22	55														
PROC-1050	Fabricate & Deliver - Structural Steel (4th Street)	60	09-28-22	12-22-22	55														

■ Remaining Level of Effort
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 ◆ Milestone
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Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024				
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
PROC-1060	Prepare & Submit - Structural Steel Shop Drawings (5th Street)	20	10-11-22	11-07-22	221					■								
PROC-1070	Review & Approve - Structural Steel Shop Drawings (5th Street)	10	11-08-22	11-21-22	221					■								
PROC-1080	Fabricate & Deliver - Structural Steel (5th Street)	60	11-22-22	02-20-23	221					■	■							
PROC-1090	Prepare & Submit - Structural Steel Shop Drawings (7th Street)	20	10-11-22	11-07-22	234					■								
PROC-1100	Review & Approve - Structural Steel Shop Drawings (7th Street)	10	11-08-22	11-21-22	234					■								
PROC-1110	Fabricate & Deliver - Structural Steel (7th Street)	60	11-22-22	02-20-23	234					■	■							
Bearings																		
PROC-2000	Prepare & Submit - Bearings Shop Drawings (1st Street)	10	08-16-22	08-29-22	69					■								
PROC-2010	Review & Approve - Bearings Shop Drawings (1st Street)	10	08-30-22	09-13-22	69					■								
PROC-2020	Fabricate & Deliver - Bearings (1st Street)	30	09-14-22	10-25-22	69					■	■							
PROC-2030	Prepare & Submit - Bearings Shop Drawings (4th Street)	10	08-16-22	08-29-22	95					■								
PROC-2040	Review & Approve - Bearings Shop Drawings (4th Street)	10	08-30-22	09-13-22	95					■								
PROC-2050	Fabricate & Deliver - Bearings (4th Street)	30	09-14-22	10-25-22	95					■	■							
PROC-2060	Prepare & Submit - Bearings Shop Drawings (5th Street)	10	10-11-22	10-24-22	261					■								
PROC-2070	Review & Approve - Bearings Shop Drawings (5th Street)	10	10-25-22	11-07-22	261					■								
PROC-2080	Fabricate & Deliver - Bearings (5th Street)	30	11-08-22	12-21-22	261					■	■							
PROC-2090	Prepare & Submit - Bearings Shop Drawings (7th Street)	10	10-11-22	10-24-22	274					■								
PROC-2100	Review & Approve - Bearings Shop Drawings (7th Street)	10	10-25-22	11-07-22	274					■								
PROC-2110	Fabricate & Deliver - Bearings (7th Street)	30	11-08-22	12-21-22	274					■	■							
PROC-2120	Prepare & Submit - Bearings Shop Drawings (Broad Street)	10	09-19-22	09-30-22	187					■								
PROC-2130	Review & Approve - Bearings Shop Drawings (Broad Street)	10	10-03-22	10-14-22	187					■								
PROC-2140	Fabricate & Deliver - Bearings (Broad Street)	30	10-17-22	11-29-22	187					■	■							
Railings																		
PROC-3000	Prepare & Submit - Railings Shop Drawings (1st Street)	10	08-16-22	08-29-22	133					■								
PROC-3010	Review & Approve - Railings Shop Drawings (1st Street)	10	08-30-22	09-13-22	133					■								
PROC-3020	Fabricate & Deliver - Railings (1st Street)	30	09-14-22	10-25-22	133					■	■							
PROC-3030	Prepare & Submit - Railings Shop Drawings (4th Street)	10	08-16-22	08-29-22	57					■								
PROC-3040	Review & Approve - Railings Shop Drawings (4th Street)	10	08-30-22	09-13-22	57					■								
PROC-3050	Fabricate & Deliver - Railings (4th Street)	30	09-14-22	10-25-22	57					■	■							
PROC-3060	Prepare & Submit - Railings Shop Drawings (5th Street)	10	10-11-22	10-24-22	328					■								
PROC-3070	Review & Approve - Railings Shop Drawings (5th Street)	10	10-25-22	11-07-22	328					■								
PROC-3080	Fabricate & Deliver - Railings (5th Street)	30	11-08-22	12-21-22	328					■	■							
PROC-3090	Prepare & Submit - Railings Shop Drawings (7th Street)	10	10-11-22	10-24-22	336					■								

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
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Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024						
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
PROC-3100	Review & Approve - Railings Shop Drawings (7th Street)	10	10-25-22	11-07-22	336															
PROC-3110	Fabricate & Deliver - Railings (7th Street)	30	11-08-22	12-21-22	336															
Fencing																				
PROC-4000	Prepare & Submit - Fencing Shop Drawings (1st Street)	10	08-16-22	08-29-22	111															
PROC-4010	Review & Approve - Fencing Shop Drawings (1st Street)	10	08-30-22	09-13-22	111															
PROC-4020	Fabricate & Deliver - Fencing (1st Street)	30	09-14-22	10-25-22	111															
PROC-4030	Prepare & Submit - Fencing Shop Drawings (4th Street)	10	08-16-22	08-29-22	63															
PROC-4040	Review & Approve - Fencing Shop Drawings (4th Street)	10	08-30-22	09-13-22	63															
PROC-4050	Fabricate & Deliver - Fencing (4th Street)	30	09-14-22	10-25-22	63															
PROC-4060	Prepare & Submit - Fencing Shop Drawings (5th Street)	10	10-11-22	10-24-22	336															
PROC-4070	Review & Approve - Fencing Shop Drawings (5th Street)	10	10-25-22	11-07-22	336															
PROC-4080	Fabricate & Deliver - Fencing (5th Street)	30	11-08-22	12-21-22	336															
PROC-4090	Prepare & Submit - Fencing Shop Drawings (7th Street)	10	10-11-22	10-24-22	342															
PROC-4100	Review & Approve - Fencing Shop Drawings (7th Street)	10	10-25-22	11-07-22	342															
PROC-4110	Fabricate & Deliver - Fencing (7th Street)	30	11-08-22	12-21-22	342															
Pre-constructed Composite Units																				
PREC-1000	Prepare & Submit - Pre-constructed Comosite Units Shop Drawings (Broad Street)	20	09-19-22	10-14-22	147															
PREC-1010	Review & Approve - Pre-constructed Comosite Units Shop Drawings (Broad Street)	10	10-17-22	10-28-22	147															
PREC-1020	Fabricate & Deliver - Pre-constructed Comosite Units (Broad Street)	60	10-31-22	01-27-23	147															
Construction																				
Mobilization																				
MOB-1000	Mobilization - Establish Project Office	20	11-11-21	12-16-21	75															
MOB-1010	Mobilization - Establish Laydown Yard	20	12-17-21	01-24-22	75															
Substructure Repairs																				
Substructure Repairs - 1st Street Bridge																				
1st Street Bridge Abutment A																				
CON-SUB-1-1000	1st St Abutment A - Setup MOT Devices	2	06-06-22	06-07-22	0															
CON-SUB-1-1010	1st St Abutment A - Perform Concrete Repairs & Slope Protection	10	06-09-22	06-23-22	0															
CON-SUB-1-1020	1st St Abutment A - Reconstruct Concrete Available Pedestals	5	06-24-22	07-01-22	0															
CON-SUB-1-1030	1st St Abutment A - Remove MOT Devices	2	07-05-22	07-07-22	0															
1st Street Bridge Pier 1																				
CON-SUB-1-2000	1st St Pier 1 - Setup MOT Devices	2	07-08-22	07-11-22	0															
CON-SUB-1-2010	1st St Pier 1 - Perform Perform Concrete Repairs	10	07-12-22	07-28-22	0															

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Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
CON-SUB-1-2020	1st St Pier 1 - Reconstruct Concrete Available Pedestals	5	07-29-22	08-05-22	0				█										
CON-SUB-1-2030	1st St Pier 1 - Remove MOT Devices	2	08-08-22	08-09-22	0														
1st Street Bridge Pier 2																			
CON-SUB-1-3000	1st St Pier 2 - Setup MOT Devices	2	08-11-22	08-12-22	0														
CON-SUB-1-3010	1st St Pier 2 - Perform Perform Concrete Repairs	10	08-15-22	08-29-22	0				█										
CON-SUB-1-3020	1st St Pier 2 - Reconstruct Concrete Available Pedestals	5	08-30-22	09-07-22	0				█										
CON-SUB-1-3030	1st St Pier 2 - Remove MOT Devices	2	09-08-22	09-09-22	0														
1st Street Bridge Pier 3																			
CON-SUB-1-4000	1st St Pier 3 - Setup MOT Devices	2	09-12-22	09-13-22	0														
CON-SUB-1-4010	1st St Pier 3 - Perform Perform Concrete Repairs	10	09-15-22	09-30-22	0				█										
CON-SUB-1-4020	1st St Pier 3 - Reconstruct Concrete Available Pedestals	5	10-03-22	10-10-22	0				█										
CON-SUB-1-4030	1st St Pier 3 - Remove MOT Devices	2	10-11-22	10-13-22	0														
1st Street Bridge Pier 4																			
CON-SUB-1-5000	1st St Pier 4 - Setup MOT Devices	2	10-14-22	10-17-22	0														
CON-SUB-1-5010	1st St Pier 4 - Perform Perform Concrete Repairs	10	10-18-22	11-03-22	0				█										
CON-SUB-1-5020	1st St Pier 4 - Reconstruct Concrete Available Pedestals	5	11-04-22	11-11-22	0				█										
CON-SUB-1-5030	1st St Pier 4 - Remove MOT Devices	2	11-14-22	11-15-22	0														
1st Street Bridge Abutment B																			
CON-SUB-1-6000	1st St Abutment B - Setup MOT Devices	2	11-17-22	11-18-22	0														
CON-SUB-1-6010	1st St Abutment B - Perform Concrete Repairs & Slope Protection	10	11-21-22	12-06-22	0				█										
CON-SUB-1-6020	1st St Abutment B - Reconstruct Concrete Available Pedestals	5	12-08-22	12-15-22	0				█										
CON-SUB-1-6030	1st St Abutment B - Remove MOT Devices	2	12-16-22	12-19-22	0														
Substructure Repairs - 4th Street Bridge																			
4th Street Bridge Abutment A																			
CON-SUB-4-1000	4th St Abutment A - Setup MOT Devices	2	06-06-22	06-07-22	78														
CON-SUB-4-1010	4th St Abutment A - Perform Concrete Repairs & Slope Protection	10	06-09-22	06-23-22	78			█											
CON-SUB-4-1020	4th St Abutment A - Reconstruct Concrete Available Pedestals	5	06-24-22	07-01-22	78			█											
CON-SUB-4-1030	4th St Abutment A - Remove MOT Devices	2	07-05-22	07-07-22	78														
4th Street Bridge Pier 1																			
CON-SUB-4-2000	4th St Pier 1 - Setup MOT Devices	2	07-08-22	07-11-22	78														
CON-SUB-4-2010	4th St Pier 1 - Perform Perform Concrete Repairs	10	07-12-22	07-28-22	78			█											
CON-SUB-4-2020	4th St Pier 1 - Reconstruct Concrete Available Pedestals	5	07-29-22	08-05-22	78			█											
CON-SUB-4-2030	4th St Pier 1 - Remove MOT Devices	2	08-08-22	08-09-22	78														



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
4th Street Bridge Abutment B																			
CON-SUB-4-3000	4th St Abutment B - Setup MOT Devices	2	08-11-22	08-12-22	78														
CON-SUB-4-3010	4th St Abutment B - Perform Concrete Repairs & Slope Protection	10	08-15-22	08-29-22	78				█										
CON-SUB-4-3020	4th St Abutment B - Reconstruct Concrete Available Pedestals	5	08-30-22	09-07-22	78				█										
CON-SUB-4-3030	4th St Abutment B - Remove MOT Devices	2	09-08-22	09-09-22	78														
Substructure Repairs - Broad Street Bridge																			
Broad Street Bridge Abutment A																			
CON-SUB-B-1000	Broad St Abutment A - Setup MOT Devices	2	09-12-22	09-13-22	87														
CON-SUB-B-1010	Broad St Abutment A - Perform Concrete Repairs & Slope Protection	10	09-15-22	09-30-22	87				█										
CON-SUB-B-1020	Broad St Abutment A - Reconstruct Concrete Available Pedestals	5	10-03-22	10-10-22	87				█										
CON-SUB-B-1030	Broad St Abutment A - Remove MOT Devices	2	10-11-22	10-13-22	87														
Broad Street Bridge Pier 1																			
CON-SUB-B-2000	Broad St Pier 1 - Setup MOT Devices	2	10-14-22	10-17-22	87														
CON-SUB-B-2010	Broad St Pier 1 - Perform Concrete Repairs	10	10-18-22	11-03-22	87				█										
CON-SUB-B-2020	Broad St Pier 1 - Reconstruct Concrete Available Pedestals	5	11-04-22	11-11-22	87				█										
CON-SUB-B-2030	Broad St Pier 1 - Remove MOT Devices	2	11-14-22	11-15-22	87														
Broad Street Bridge Abutment B																			
CON-SUB-B-3000	Broad St Abutment B - Setup MOT Devices	2	11-17-22	11-18-22	87														
CON-SUB-B-3010	Broad St Abutment B - Perform Concrete Repairs & Slope Protection	10	11-21-22	12-06-22	87				█										
CON-SUB-B-3020	Broad St Abutment B - Reconstruct Concrete Available Pedestals	5	12-08-22	12-15-22	87				█										
CON-SUB-B-3030	Broad St Abutment B - Remove MOT Devices	2	12-16-22	12-19-22	87														
Substructure Repairs - 5th Street Bridge																			
5th Street Bridge Abutment A																			
CON-SUB-5-1000	5th St Abutment A - Setup MOT Devices	2	12-20-22	12-22-22	96														
CON-SUB-5-1010	5th St Abutment A - Perform Concrete Repairs & Slope Protection	10	12-27-22	01-13-23	96				█										
CON-SUB-5-1020	5th St Abutment A - Reconstruct Concrete Available Pedestals	5	01-16-23	01-23-23	96				█										
CON-SUB-5-1030	5th St Abutment A - Remove MOT Devices	2	01-24-23	01-26-23	96														
5th Street Bridge Pier 1																			
CON-SUB-5-2000	5th St Pier 1 - Setup MOT Devices	2	01-27-23	01-30-23	96														
CON-SUB-5-2010	5th St Pier 1 - Perform Concrete Repairs	10	01-31-23	02-16-23	96				█										
CON-SUB-5-2020	5th St Pier 1 - Reconstruct Concrete Available Pedestals	5	02-17-23	02-24-23	96				█										
CON-SUB-5-2030	5th St Pier 1 - Remove MOT Devices	2	02-27-23	02-28-23	96														
5th Street Bridge Pier 2																			

█ Remaining Level of Effort
 █ Remaining Work
 ◆ Milestone
█ Actual Work
 █ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
CON-SUB-5-3000	5th St Pier 2 - Setup MOT Devices	2	03-02-23	03-03-23	96														
CON-SUB-5-3010	5th St Pier 2 - Perform Perform Concrete Repairs	10	03-06-23	03-20-23	96						■								
CON-SUB-5-3020	5th St Pier 2 - Reconstruct Concrete Available Pedestals	5	03-21-23	03-28-23	96						■								
CON-SUB-5-3030	5th St Pier 2 - Remove MOT Devices	2	03-30-23	03-31-23	96														
5th Street Bridge Pier 3																			
CON-SUB-5-4000	5th St Pier 3 - Setup MOT Devices	2	04-03-23	04-04-23	96														
CON-SUB-5-4010	5th St Pier 3 - Perform Perform Concrete Repairs	10	04-05-23	04-21-23	96						■								
CON-SUB-5-4020	5th St Pier 3 - Reconstruct Concrete Available Pedestals	5	04-24-23	05-01-23	96						■								
CON-SUB-5-4030	5th St Pier 3 - Remove MOT Devices	2	05-02-23	05-04-23	96														
5th Street Bridge Abutment B																			
CON-SUB-5-5000	5th St Abutment B - Setup MOT Devices	2	05-05-23	05-08-23	96														
CON-SUB-5-5010	5th St Abutment B - Perform Concrete Repairs & Slope Protection	10	05-09-23	05-25-23	96						■								
CON-SUB-5-5020	5th St Abutment B - Reconstruct Concrete Available Pedestals	5	05-26-23	06-02-23	96						■								
CON-SUB-5-5030	5th St Abutment B - Remove MOT Devices	2	06-05-23	06-06-23	96														
Substructure Repairs - 7th Street Bridge																			
7th Street Bridge Abutment A																			
CON-SUB-7-1000	7th St Abutment A - Setup MOT Devices	2	12-20-22	12-22-22	87														
CON-SUB-7-1010	7th St Abutment A - Perform Concrete Repairs & Slope Protection	10	12-27-22	01-13-23	87						■								
CON-SUB-7-1020	7th St Abutment A - Reconstruct Concrete Available Pedestals	5	01-16-23	01-23-23	87						■								
CON-SUB-7-1030	7th St Abutment A - Remove MOT Devices	2	01-24-23	01-26-23	87														
7th Street Bridge Pier 1																			
CON-SUB-7-2000	7th St Pier 1 - Setup MOT Devices	2	01-27-23	01-30-23	87														
CON-SUB-7-2010	7th St Pier 1 - Perform Perform Concrete Repairs	10	01-31-23	02-16-23	87						■								
CON-SUB-7-2020	7th St Pier 1 - Reconstruct Concrete Available Pedestals	5	02-17-23	02-24-23	87						■								
CON-SUB-7-2030	7th St Pier 1 - Remove MOT Devices	2	02-27-23	02-28-23	87														
7th Street Bridge Pier 2																			
CON-SUB-7-3000	7th St Pier 2 - Setup MOT Devices	2	03-02-23	03-03-23	87														
CON-SUB-7-3010	7th St Pier 2 - Perform Perform Concrete Repairs	10	03-06-23	03-20-23	87						■								
CON-SUB-7-3020	7th St Pier 2 - Reconstruct Concrete Available Pedestals	5	03-21-23	03-28-23	87						■								
CON-SUB-7-3030	7th St Pier 2 - Remove MOT Devices	2	03-30-23	03-31-23	87														
7th Street Bridge Pier 3																			
CON-SUB-7-4000	7th St Pier 3 - Setup MOT Devices	2	04-03-23	04-04-23	87														
CON-SUB-7-4010	7th St Pier 3 - Perform Perform Concrete Repairs	10	04-05-23	04-21-23	87						■								

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 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
CON-SUB-7-4020	7th St Pier 3 - Reconstruct Concrete Available Pedestals	5	04-24-23	05-01-23	87														
CON-SUB-7-4030	7th St Pier 3 - Remove MOT Devices	2	05-02-23	05-04-23	87														
7th Street Bridge Pier 4																			
CON-SUB-7-5000	7th St Pier 4 - Setup MOT Devices	2	05-05-23	05-08-23	87														
CON-SUB-7-5010	7th St Pier 4 - Perform Perform Concrete Repairs	10	05-09-23	05-25-23	87														
CON-SUB-7-5020	7th St Pier 4 - Reconstruct Concrete Available Pedestals	5	05-26-23	06-02-23	87														
CON-SUB-7-5030	7th St Pier 4 - Remove MOT Devices	2	06-05-23	06-06-23	87														
7th Street Bridge Abutment B																			
CON-SUB-7-6000	7th St Abutment B - Setup MOT Devices	2	06-08-23	06-09-23	87														
CON-SUB-7-6010	7th St Abutment B - Perform Concrete Repairs & Slope Protection	10	06-12-23	06-27-23	87														
CON-SUB-7-6020	7th St Abutment B - Reconstruct Concrete Available Pedestals	5	06-29-23	07-07-23	87														
CON-SUB-7-6030	7th St Abutment B - Remove MOT Devices	2	07-10-23	07-11-23	87														
Superstructure Repairs																			
Stage I Superstructure Repairs																			
1st Street Bridge Super Structure Repairs																			
1st Street Utility Relocations																			
CON-SUP-1-1000	1st St Utility Relocations - Dominion	20	08-16-22	09-16-22	3														
CON-SUP-1-1010	1st St Utility Relocations - Verizon	60	08-16-22	11-28-22	98														
CON-SUP-1-1020	1st St Utility Relocations - Crown Castle / Sidera (DOM)	10	09-19-22	10-04-22	3														
CON-SUP-1-1030	1st St Utility Relocations - Lumen / Level 3 (DOM)	10	10-06-22	10-21-22	3														
CON-SUP-1-1040	1st St Utility Relocations - Verizon Business / MCI (DOM)	10	10-24-22	11-08-22	3														
CON-SUP-1-1050	1st St Utility Relocations - Comcast (DOM)	20	11-10-22	12-13-22	3														
CON-SUP-1-1060	1st St Utility Relocations - Remove Existing City GAS	10	05-22-23	06-06-23	0														
1st Street Bridge Phase 1																			
CON-SUP-1-2000	1st St Phase 1 - Install MOT Devices / Detour	5	12-20-22	12-30-22	0														
CON-SUP-1-2010	1st St Phase 1 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	01-03-23	01-19-23	0														
CON-SUP-1-2020	1st St Phase 1 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	01-20-23	02-06-23	0														
CON-SUP-1-2030	1st St Phase 1 - Install Bearings / Beams / Diaphragms	5	02-07-23	02-14-23	0														
CON-SUP-1-2040	1st St Phase 1 - Construct & Pour New Deck	17	02-16-23	03-15-23	0														
CON-SUP-1-2050	1st St Phase 1 - Install 12" Waterline	5	03-16-23	03-23-23	33														
CON-SUP-1-2060	1st St Phase 1 - Construct Approach Roadway Shoulder Paving & Drainage	16	03-16-23	04-11-23	0														
CON-SUP-1-2070	1st St Phase 1 - Install COR DEC Underbridge Conduit	5	03-24-23	03-31-23	33														
CON-SUP-1-2080	1st St Phase 1 - Construct CPSR Railing Wall	15	04-13-23	05-08-23	0														

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
■ Actual Work
 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
CON-SUP-1-2090	1st St Phase 1 - Install CPSR Railing	7	05-09-23	05-19-23	0														
CON-SUP-1-2100	1st St Phase 1 - Install Pedestrian Fence	5	05-22-23	05-30-23	0														
CON-SUP-1-2110	1st St Phase 1 - Remove MOT	5	05-31-23	06-06-23	0														
1st Street Bridge Phase 2																			
CON-SUP-1-3000	1st St Phase 2 - Install MOT Devices / Detour	5	06-08-23	06-15-23	0														
CON-SUP-1-3010	1st St Phase 2 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	06-16-23	07-03-23	0														
CON-SUP-1-3020	1st St Phase 2 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	07-06-23	07-21-23	0														
CON-SUP-1-3030	1st St Phase 2 - Install Bearings / Beams / Diaphragms	5	07-24-23	07-31-23	0														
CON-SUP-1-3040	1st St Phase 2 - Construct & Pour New Deck	18	08-01-23	08-29-23	0														
CON-SUP-1-3050	1st St Phase 2 - Construct Approach Roadway Shoulder Paving & Drainage	16	08-31-23	09-26-23	0														
CON-SUP-1-3060	1st St Phase 2 - Install New Gas Line	20	08-31-23	10-03-23	18														
CON-SUP-1-3070	1st St Phase 2 - Construct CPSR Railing Wall	15	09-28-23	10-23-23	0														
CON-SUP-1-3080	1st St Phase 2 - Install Verizon Underbridge Conduit	5	10-05-23	10-12-23	18														
CON-SUP-1-3090	1st St Phase 2 - Install CPSR Railing	7	10-24-23	11-03-23	0														
CON-SUP-1-3100	1st St Phase 2 - Install Pedestrian Fence	5	11-06-23	11-13-23	0														
CON-SUP-1-3110	1st St Phase 2 - Remove MOT	5	11-14-23	11-21-23	0														
4th Street Bridge Super Structure Repairs																			
4th Street Utility Relocations																			
CON-SUP-4-1000	4th St Utility Relocations - City LIGHTING	5	08-16-22	08-22-22	174														
CON-SUP-4-1010	4th St Utility Relocations - City WATER (Relocate Fire Hydrant)	5	09-06-22	09-12-22	167														
4th Street Bridge Phase 1																			
CON-SUP-4-2000	4th St Phase 1 - Install MOT Devices	5	09-12-22	09-19-22	78														
CON-SUP-4-2010	4th St Phase 1 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	09-20-22	10-06-22	78														
CON-SUP-4-2020	4th St Phase 1 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	10-07-22	10-24-22	78														
CON-SUP-4-2030	4th St Phase 1 - Install Bearings / Beams / Diaphragms	5	12-27-22	01-05-23	44														
CON-SUP-4-2040	4th St Phase 1 - Construct & Pour New Deck	15	01-06-23	01-31-23	44														
CON-SUP-4-2050	4th St Phase 1 - Install COR Lighting Underbridge Conduit	5	02-02-23	02-09-23	79														
CON-SUP-4-2060	4th St Phase 1 - Construct Approach Roadway Shoulder Paving & Drainage	15	02-02-23	02-27-23	44														
CON-SUP-4-2070	4th St Phase 1 - Construct CPSR Railing Wall	15	02-28-23	03-23-23	44														
CON-SUP-4-2080	4th St Phase 1 - Install CPSR Railing	5	03-24-23	03-31-23	44														
CON-SUP-4-2090	4th St Phase 1 - Install Pedestrian Fence	5	04-03-23	04-10-23	44														
CON-SUP-4-2100	4th St Phase 1 - Remove MOT	5	04-11-23	04-18-23	44														
4th Street Bridge Phase 2																			

■ Remaining Level of Effort
 ■ Remaining Work
 ◆ Milestone
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 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
CON-SUP-4-3000	4th St Phase 2 - Install MOT Devices	5	04-20-23	04-27-23	44														
CON-SUP-4-3010	4th St Phase 2 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	04-28-23	05-15-23	44														
CON-SUP-4-3020	4th St Phase 2 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	05-16-23	06-01-23	44														
CON-SUP-4-3030	4th St Phase 2 - Install Bearings / Beams / Diaphragms	5	06-02-23	06-09-23	44														
CON-SUP-4-3040	4th St Phase 2 - Construct & Pour New Deck	15	06-12-23	07-07-23	44														
CON-SUP-4-3050	4th St Phase 2 - Construct Approach Roadway Shoulder Paving & Drainage	15	07-10-23	08-03-23	44														
CON-SUP-4-3060	4th St Phase 2 - Construct CPSR Railing Wall	15	08-04-23	08-28-23	44														
CON-SUP-4-3070	4th St Phase 2 - Install CPSR Railing	5	08-29-23	09-06-23	44														
CON-SUP-4-3080	4th St Phase 2 - Install Pedestrian Fence	5	09-07-23	09-14-23	44														
CON-SUP-4-3090	4th St Phase 2 - Remove MOT	5	09-15-23	09-22-23	44														
Broad Street Bridge Super Structure Repairs																			
Broad Street Utility Relocations																			
CON-SUP-B-1000	Broad St Utility Relocations - Dominion	5	09-19-22	09-26-22	183														
CON-SUP-B-1010	Broad St Utility Relocations - City GAS	1	09-27-22	09-27-22	183														
CON-SUP-B-1020	Broad St Utility Relocations - DOM / City LIGHTING	5	09-29-22	10-06-22	183														
CON-SUP-B-1030	Broad St Utility Relocations - City WATER South Side	10	02-06-23	02-21-23	142														
CON-SUP-B-1040	Broad St Utility Relocations - Install City Lighting North Underbridge Conduit	5	03-20-23	03-27-23	146														
CON-SUP-B-1050	Broad St Utility Relocations - City WATER North Side	10	03-20-23	04-04-23	127														
CON-SUP-B-1060	Broad St Utility Relocations - Install DOM/City Lighting South Underbridge Conduit	15	04-05-23	05-01-23	127														
Broad Street Bridge Phase 1																			
Broad Street Bridge Phase 1A																			
CON-SUP-B-2000	Broad St Phase 1A - Install MOT Devices / Detour	1	01-27-23	01-28-23	196														
CON-SUP-B-2010	Broad St Phase 1A - Demolish Existing Superstructure	1	01-28-23	01-28-23	196														
CON-SUP-B-2020	Broad St Phase 1A - Reconstruct Portions of Beam Seats & Set Bearings	2	01-28-23	01-28-23	196														
CON-SUP-B-2030	Broad St Phase 1A - Place Precast Bridge Units	1	01-28-23	01-29-23	196														
CON-SUP-B-2040	Broad St Phase 1A - Install Approach Slab Units at Abutment A & B	1	01-29-23	01-29-23	196														
CON-SUP-B-2050	Broad St Phase 1A - Pour Closure Joints (PBU & Approach Slabs)	1	01-29-23	01-29-23	197														
CON-SUP-B-2060	Broad St Phase 1A - Backfill / Reconstruct Roadway & Approaches / Guardrail	2	01-29-23	01-30-23	196														
CON-SUP-B-2070	Broad St Phase 1A - Remove MOT Devices / Detour / Open to Traffic	1	01-30-23	01-30-23	196														
Broad Street Bridge Phase 1B																			
CON-SUP-B-2500	Broad St Phase 1B - Install MOT Devices / Detour	1	02-03-23	02-04-23	196														
CON-SUP-B-2510	Broad St Phase 1B - Demolish Existing Superstructure	1	02-04-23	02-04-23	196														
CON-SUP-B-2520	Broad St Phase 1B - Reconstruct Portions of Beam Seats & Set Bearings	2	02-04-23	02-04-23	196														

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 ◆ Milestone
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 ■ Critical Remaining Work



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024				
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CON-SUP-B-2530	Broad St Phase 1B - Place Precast Bridge Units	1	02-04-23	02-05-23	196													
CON-SUP-B-2540	Broad St Phase 1B - Install Approach Slab Units at Abutment A & B	1	02-05-23	02-05-23	196													
CON-SUP-B-2550	Broad St Phase 1B - Pour Closure Joints (PBU & Approach Slabs)	1	02-05-23	02-05-23	196													
CON-SUP-B-2560	Broad St Phase 1B - Backfill / Reconstruct Roadway & Approaches	1	02-05-23	02-06-23	196													
CON-SUP-B-2570	Broad St Phase 1B - Remove MOT Devices / Detour / Open to Traffic	1	02-06-23	02-06-23	196													
Broad Street Bridge Phase 1C																		
CON-SUP-B-3000	Broad St Phase 1C - Install MOT Devices / Detour	1	02-10-23	02-11-23	196													
CON-SUP-B-3010	Broad St Phase 1C - Demolish Existing Superstructure	1	02-11-23	02-11-23	196													
CON-SUP-B-3020	Broad St Phase 1C - Reconstruct Portions of Beam Seats & Set Bearings	2	02-11-23	02-11-23	196													
CON-SUP-B-3030	Broad St Phase 1C - Place Precast Bridge Units	1	02-11-23	02-12-23	196													
CON-SUP-B-3040	Broad St Phase 1C - Install Approach Slab Units at Abutment A & B	1	02-12-23	02-12-23	196													
CON-SUP-B-3050	Broad St Phase 1C - Pour Closure Joints (PBU & Approach Slabs)	1	02-12-23	02-12-23	196													
CON-SUP-B-3060	Broad St Phase 1C - Backfill / Reconstruct Roadway & Approaches	1	02-12-23	02-13-23	196													
CON-SUP-B-3070	Broad St Phase 1C - Remove MOT Devices / Detour / Open to Traffic	1	02-13-23	02-13-23	196													
Broad Street Bridge Phase 1D																		
CON-SUP-B-3500	Broad St Phase 1D - Install MOT Devices / Detour	1	02-17-23	02-18-23	196													
CON-SUP-B-3510	Broad St Phase 1D - Demolish Existing Superstructure	1	02-18-23	02-18-23	196													
CON-SUP-B-3520	Broad St Phase 1D - Reconstruct Portions of Beam Seats & Set Bearings	2	02-18-23	02-18-23	196													
CON-SUP-B-3530	Broad St Phase 1D - Place Precast Bridge Units	1	02-18-23	02-19-23	196													
CON-SUP-B-3540	Broad St Phase 1D - Install Approach Slab Units at Abutment A & B	1	02-19-23	02-19-23	196													
CON-SUP-B-3550	Broad St Phase 1D - Pour Closure Joints (PBU & Approach Slabs)	1	02-19-23	02-19-23	196													
CON-SUP-B-3560	Broad St Phase 1D - Backfill / Reconstruct Roadway & Approaches	1	02-19-23	02-20-23	196													
CON-SUP-B-3570	Broad St Phase 1D - Remove MOT Devices / Detour / Open to Traffic	1	02-20-23	02-20-23	196													
Broad Street Bridge Phase 2																		
Broad Street Bridge Phase 2A																		
CON-SUP-B-4000	Broad St Phase 2A - Install MOT Devices / Detour	1	02-24-23	02-25-23	196													
CON-SUP-B-4010	Broad St Phase 2A - Demolish Existing Superstructure	1	02-25-23	02-25-23	196													
CON-SUP-B-4020	Broad St Phase 2A - Reconstruct Portions of Beam Seats & Set Bearings	2	02-25-23	02-25-23	196													
CON-SUP-B-4030	Broad St Phase 2A - Place Precast Bridge Units	1	02-25-23	02-26-23	196													
CON-SUP-B-4040	Broad St Phase 2A - Install Approach Slab Units at Abutment A & B	1	02-26-23	02-26-23	196													
CON-SUP-B-4050	Broad St Phase 2A - Pour Closure Joints (PBU & Approach Slabs)	1	02-26-23	02-26-23	196													
CON-SUP-B-4060	Broad St Phase 2A - Backfill / Reconstruct Roadway & Approaches	1	02-26-23	02-27-23	196													
CON-SUP-B-4070	Broad St Phase 2A - Remove MOT Devices / Detour / Open to Traffic	1	02-27-23	02-27-23	196													



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024						
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Broad Street Bridge Phase 2B																				
CON-SUP-B-4500	Broad St Phase 2B - Install MOT Devices / Detour	1	03-03-23	03-04-23	196															
CON-SUP-B-4510	Broad St Phase 2B - Demolish Existing Superstructure	1	03-04-23	03-04-23	196															
CON-SUP-B-4520	Broad St Phase 2B - Reconstruct Portions of Beam Seats & Set Bearings	2	03-04-23	03-04-23	196															
CON-SUP-B-4530	Broad St Phase 2B - Place Precast Bridge Units	1	03-04-23	03-05-23	196															
CON-SUP-B-4540	Broad St Phase 2B - Install Approach Slab Units at Abutment A & B	1	03-05-23	03-05-23	196															
CON-SUP-B-4550	Broad St Phase 2B - Pour Closure Joints (PBU & Approach Slabs)	1	03-05-23	03-05-23	196															
CON-SUP-B-4560	Broad St Phase 2B - Backfill / Reconstruct Roadway & Approaches	1	03-05-23	03-06-23	196															
CON-SUP-B-4570	Broad St Phase 2B - Remove MOT Devices / Detour / Open to Traffic	1	03-06-23	03-06-23	196															
Broad Street Bridge Phase 2C																				
CON-SUP-B-5000	Broad St Phase 2C - Install MOT Devices / Detour	1	03-10-23	03-11-23	196															
CON-SUP-B-5010	Broad St Phase 2C - Demolish Existing Superstructure	1	03-11-23	03-11-23	196															
CON-SUP-B-5020	Broad St Phase 2C - Reconstruct Portions of Beam Seats & Set Bearings	2	03-11-23	03-11-23	196															
CON-SUP-B-5030	Broad St Phase 2C - Place Precast Bridge Units	1	03-11-23	03-12-23	196															
CON-SUP-B-5040	Broad St Phase 2C - Install Approach Slab Units at Abutment A & B	1	03-12-23	03-12-23	196															
CON-SUP-B-5050	Broad St Phase 2C - Pour Closure Joints (PBU & Approach Slabs)	1	03-12-23	03-12-23	196															
CON-SUP-B-5060	Broad St Phase 2C - Backfill / Reconstruct Roadway & Approaches	1	03-12-23	03-13-23	196															
CON-SUP-B-5070	Broad St Phase 2C - Remove MOT Devices / Detour / Open to Traffic	1	03-13-23	03-13-23	196															
Broad Street Bridge Phase 2D																				
CON-SUP-B-5500	Broad St Phase 2D - Install MOT Devices / Detour	1	03-17-23	03-18-23	196															
CON-SUP-B-5510	Broad St Phase 2D - Demolish Existing Superstructure	1	03-18-23	03-18-23	196															
CON-SUP-B-5520	Broad St Phase 2D - Reconstruct Portions of Beam Seats & Set Bearings	2	03-18-23	03-18-23	196															
CON-SUP-B-5530	Broad St Phase 2D - Place Precast Bridge Units	1	03-18-23	03-19-23	196															
CON-SUP-B-5540	Broad St Phase 2D - Install Approach Slab Units at Abutment A & B	1	03-19-23	03-19-23	196															
CON-SUP-B-5550	Broad St Phase 2D - Pour Closure Joints (PBU & Approach Slabs)	1	03-19-23	03-19-23	197															
CON-SUP-B-5560	Broad St Phase 2D - Backfill / Reconstruct Roadway & Approaches / Guardrail	2	03-19-23	03-20-23	196															
CON-SUP-B-5570	Broad St Phase 2D - Remove MOT Devices / Detour / Open to Traffic	1	03-20-23	03-20-23	196															
Broad Street Bridge Roadway																				
CON-RDW-B-1000	Broad St Roadway - Roadway Finishes	5	03-20-23	03-27-23	144															
CON-RDW-B-1010	Broad St Roadway - Mill & Overlay Approaches	2	03-28-23	03-30-23	144															
CON-RDW-B-1020	Broad St Roadway - Final Striping	1	03-31-23	03-31-23	144															
Stage II Superstructure Repairs																				
5th Street Bridge Super Structure Repairs																				



Activity ID	Activity Name	OD	Start	Finish	TF	2022				2023				2024					
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
5th Street Utility Relocations																			
CON-SUP-5-1000	5th St Utility Relocations - Remove City GAS	1	12-01-23	12-01-23	9														
CON-SUP-5-1010	5th St Utility Relocations - Dominion	25	02-26-24	04-09-24	113														
5th Street Bridge Phase 1																			
CON-SUP-5-2000	5th St Phase 1 - Install MOT Devices	5	11-22-23	11-30-23	0														
CON-SUP-5-2010	5th St Phase 1 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	12-01-23	12-18-23	0														
CON-SUP-5-2020	5th St Phase 1 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	12-19-23	01-08-24	0														
CON-SUP-5-2030	5th St Phase 1 - Install Bearings / Beams / Diaphragms	5	01-09-24	01-16-24	0														
CON-SUP-5-2040	5th St Phase 1 - Construct & Pour New Deck	17	01-18-24	02-15-24	0														
CON-SUP-5-2050	5th St Phase 1 - Install Underbridge Power Conduits	5	02-16-24	02-23-24	38														
CON-SUP-5-2060	5th St Phase 1 - Construct Approach Roadway Shoulder Paving & Drainage	16	02-16-24	03-14-24	0														
CON-SUP-5-2070	5th St Phase 1 - Construct CPSR Railing Wall	15	03-15-24	04-11-24	0														
CON-SUP-5-2080	5th St Phase 1 - Install CPSR Railing	7	04-12-24	04-23-24	0														
CON-SUP-5-2090	5th St Phase 1 - Install Pedestrian Fence	5	04-24-24	04-30-24	0														
CON-SUP-5-2100	5th St Phase 1 - Remove MOT	5	05-02-24	05-09-24	0														
5th Street Bridge Phase 2																			
CON-SUP-5-3000	5th St Phase 2 - Install MOT Devices	5	05-10-24	05-17-24	0														
CON-SUP-5-3010	5th St Phase 2 - Install Temporary Pavement Markings & Place Temporary Service Concrete Barrier	10	05-20-24	06-04-24	0														
CON-SUP-5-3020	5th St Phase 2 - Remove Concrete Barrier and Sawcut Existing Concrete Deck and Remove Beams	10	06-06-24	06-21-24	0														
CON-SUP-5-3030	5th St Phase 2 - Install Bearings / Beams / Diaphragms	5	06-24-24	07-01-24	0														
CON-SUP-5-3040	5th St Phase 2 - Construct & Pour New Deck	17	07-02-24	07-30-24	0														
CON-SUP-5-3050	5th St Phase 2 - Install 12" Water Line	5	08-01-24	08-08-24	38														
CON-SUP-5-3060	5th St Phase 2 - Construct Approach Roadway Shoulder Paving & Drainage	16	08-01-24	08-27-24	0														
CON-SUP-5-3070	5th St Phase 2 - Construct CPSR Railing Wall	15	08-29-24	09-23-24	0														
CON-SUP-5-3080	5th St Phase 2 - Install CPSR Railing	7	09-24-24	10-04-24	0														
CON-SUP-5-3090	5th St Phase 2 - Install Pedestrian Fence	5	10-07-24	10-14-24	0														
CON-SUP-5-3100	5th St Phase 2 - Remove MOT	5	10-15-24	10-21-24	0														
7th Street Bridge Super Structure Repairs																			
7th Street Utility Relocations																			
CON-SUP-7-1000	7th St Utility Relocations - Dominion	20	09-25-23	10-27-23	114														
CON-SUP-7-1010	7th St Utility Relocations - Remove 7th St Utility Relocations - City GAS	1	10-20-23	10-20-23	53														
CON-SUP-7-1020	7th St Utility Relocations - Windstream (DOM)	15	10-30-23	11-22-23	114														
CON-SUP-7-1030	7th St Utility Relocations - Verizon	60	12-21-23	04-08-24	99														



